E-TECH ACADEMY (NEET & IIT-JEE)

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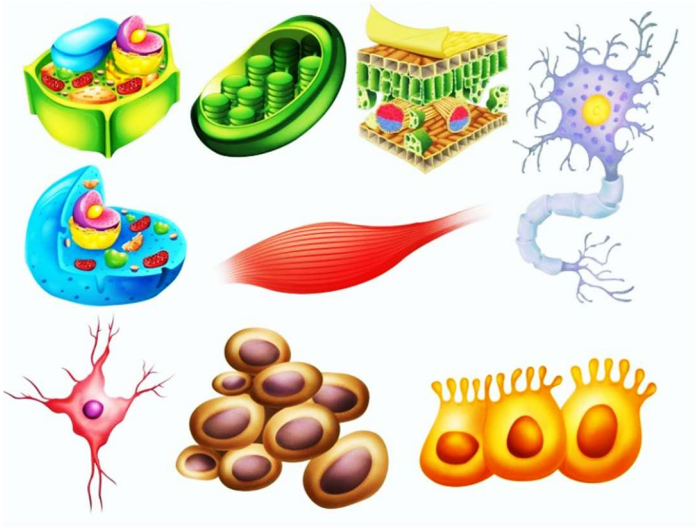
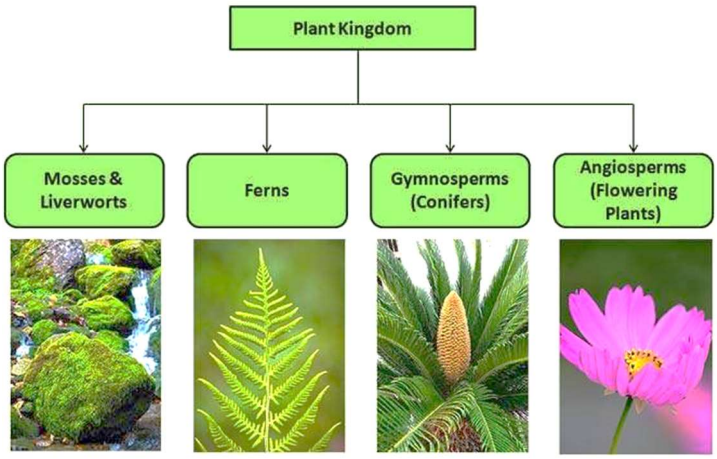




Volume-5

INDEX

BIOLOGICAL CLASSIFICATION

LEVEL-1

1. The type of nutrition, where organisms engulf food materials, is?

1) Saprozoic 2) Autotrophic
3) Holozoic 4) Saprophytic

2. Which one of the following is a matching pair of certain organisms (s) and the kind of association?

1) Shark and sucker fish – Commensalism
2) Algae and fungi in lichens – Mutualism
3) Orchids growing of trees - Parasitism
4) Cuscuta (dodder) growing - Epiphytism On other flowering plants

3. A kingdom common to unicellular animals and plants is

1) Monera 2) Plantae
3) Fungi 4) Protista

4. Membrane-bound organelles are absent in

1) Saccharomyces 2) Streptococcus
3) Chlamydomonas 4) Plasmodium

5. In the five-kingdom classification, Chlamydomonas and Chlorella are included in

1) Plantae 2) Algae
3) Protista 4) Monera

6. Enzymes are absent in

1) Algae 2) Plants
3) Virus 4) Bacteria

7. In which kingdom, would you classify the archaea and nitrogen-fixing organisms, if the five-kingdom system of classification is used

1) Protista 2) Monera
3) Plantae 4) Fungi

8 Which one is the most abundant microorganism?

1) Algae 2) Viruses
3) Protists 4) Bacteria

9. Common cold is a

1) Bacterial disease 2) Viral disease
3) Protozoan disease 4) Fungal disease

10. Purified antibiotic penicillin of Penicillium notatum was discovered by

1) Alexander Fleming
2) Howard Floxy
3) Robert Hooke
4) Carolus Linnaeus

11. Parasexuality was first discovered in

1) Bacteria 2) Virus
3) Fungi 4) None of these

12 Which is responsible for recycling of material?

1) Bacteria 2) Algae
3) Protista 4) Virus

13. Parasitic and saprophytic conditions are more familiar in

1) Fungi 2) Bacteria 3) Algae 4) Ferns

14. In addition to absence of chlorophyll, what is the other difference between fungi and higher plants?

1) Type of nutrition and composition
2) Cell type of cell wall
3) Nucleus
4) Reproduction

15. Which one of the following are intracellular obligate parasites?

1) Bacteria 2) Viruses
3) Slime moulds 4) Blue-green algae

16. Plant like nutrition is present in

1) Amoeba 2)Paramecium

3)Euglena 4)Plasmodium

17. The replacement of two kingdom grouping by five kingdom classification was proposed in the year

1) 1859 2) 1758

3) 1862 4) 1969

18 Single-celled eukaryotes are included in

1) Protista 2) Fungi

3) Archaea 4) Monera

19 I. DJ Ivanowsky (1892) recognised certain microbes as causal organisms of the mosaic. disease of tobacco

II. MW Beijerinck (1898) demonstrated that the extract of infected plants of tobacco could cause infection in healthy plants and called the fluid as contagium vivum fluidum

III. WM Stanley (1935) showed that these microbes could be crystallised and crystals consist largely of protein

The above statements are assigned to

1) Bacteria 2) Virus

3) Prions 4) Lichens

20. Microphagial nutrition occurs in

1) Amphioxus 2) Insects

3) Paramecium 4) Hydra

21. Aristotle classified the plants on the basis of their morphological characters and categorised them into

1) Tree, shrubs and herbs

2)Algae, bryophytes, pteridophytes, gymnosperms and angiosperms

3) Embryophytes and tracheophytes

4) Algae and embryophytes

22. The kingdom of prokaryotes is

1) Protista 2) Monera

3) Fungi 4) Plantae

23. Which one of the following helps in absorption of phosphorus from soil by plants?

1) Rhizohium 2)Frankia

3)Anabaena 4)Glomus

24. Which of the following bacteria are responsible for the production of biogas from the dung of cows and buffaloes?

1) Thermoacidophiles

2) Halophiles

3) Methanogen

4) Cyanobacteria

25. The wall of bacteria consists of

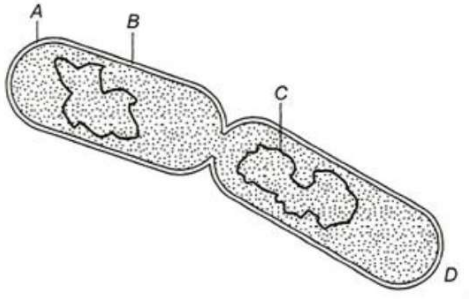
1) N-acetyl glucosamine

2) N-acetyl muramic acid

3) Both (1) and (2)

4) Cellulose

26. Identify the label A, B, C and D in the following figures



1) A-Plasma membrane, B-Cell wall, C-RNA, D-Spore formation

2) A-Cell wall, B-Cell membrane, C-DNA, D-Binary fission

3) A-Mucilaginous, B-Cell membrane, C-RNA, D-Conjugation

4) A-Plasma membrane, B-Mucilaginous, C-DNA, D-Transformation

27. All eubacteria have

1) Rigid cell wall 2) Flagellum
3) Silica 4) Both (1) and (2)

28. Which of the following is a symbiotic nitrogen fixer?

1) Glomus 2) Azotobacter
3) Frankia 4) Azolla

29. Certain bacteria living in the soil poor in oxygen, convert nitrates into nitrites and then to free nitrogen and such bacteria are termed as

1) Nitrogen fixing bacteria
2) Denitrifying bacteria
3) Ammonifying bacteria
4) Saprophytic bacteria

30. Heterocysts present in Nostoc are specialised for

1) Photosynthesis 2) Foodstorge
3) Nitrogen fixation 4) Fragmentation

31. Free living, aerobic, non-photosynthetic, nitrogen fixing bacterium is

1) Azotobacter 2) E.coli
3) Nostoc 4) Salmonella

32. The autonomously independent self-replicating extra nuclear DNA imparting certain factors to some bacterium is called

1)Plastid 2) Plasmid
3)Phagemid 4) Cosmid

33 Reproduction in most of the bacteria is by a process known as

1) Binary fission 2) Budding
3) Sexual 4) Sporulation

34. Some bacteria utilises inorganic substances like nitrate, nitrite, ammonia, etc., for the oxidation and release of energy for ATP production. These are known as

1) Cyanobacteria
2) Chemosynthetic autotrophic bacteria
3) Heterotrophic bacteria
4) Saprophytic bacteria

35. The main difference between Gram positive and Gram-negative bacteria is

1) Cell membrane 2) Cell wall
3) Ribosome 4) Mitochondria

36. O2 does not evolved in photosynthesis of

1) BGA 2) Green algae
3) Bacteria 4) Autotrophic plant

37. Bacterium which reduces nitrates in soil to nitrogen is

1) Nitrosomonas 2) Pseudomonas
3) Rhizobium 4) Clostridium

38. Transformation experiment was first performed on which bacteria?

1) E. coli 2) Diplococcus pneumoniae
3) Salmonella typhi 4) Pasteurella pestis

39. Cyanobacteriun is an

1) Alga having blue-green pigment
2) Alga having red pigment
3) Alga having brown pigment
4) Alga having yellow-brown pigment

40. Phage genome site on bacterial chromosome resulted in the structure

1) Nucleic acid 2) Heterocyst
3) Prophage 4) None of these

41. Which of the following conditions would be favoured by thermoacidophiles?

1) Hot and alkaline
2) Snow and acidic
3) Hot and sulphur spring
4) Gut of cows

42. Gene regulation in bacteria is shown by

1) Jacob and Monod
2) Beadle and Tatum
3)Temin and Baltimore
4) Kornberg

43. Which of the following is a free-living nitrogen fixing bacterium present in the soil?

1)Nitrosomonas 2)Rhizobium
3) Azotobacter 4)Pseudomonas

44. Bacteria with single flagella at one end is called

1) Monotrichous 2) Lophotrichous
3) Amphitrichous 4) Peritrichous

45. Which of the following is the site of respiration in bacteria?

1) Episome 2) Ribosome
3) Mesosome 4) Microsome

46.. Bacteria differ from plants in that they do not have

1) DNA 2) RNA
3) Cell wall 4) A well define nucleus

47. Bacterial flagella do not show ATPase activity and 9+2 organization. These are chemically formed of

1) Flagellin 2) Pilin
3) Tubulin 4) Bacterin

48. Substances secreted by bacteria are

1) Proteins 2) Toxins
3) Interferons 4) Antibiotics

49. Some bacteria thrive extreme environment conditions such as absence of oxygen, high salt concentration, high temperature and acidic pH. Identify the type of bacteria

1) Cyanobacteria 2) Eubacteria
3) Archaebacteria 4) Mycobacteria

50. Citrus canker is a

1) Viral disease 2) Bacterial disease
3) Fungal disease 4) Protozoan disease

51. In cyanobacteria, which of the following is present?

1) Chlorophyll-c 2) Chlorophyll-b
3) Chlorophyll-a 4) Chloropyll-c_1

52. Consider the following statements about mycoplasma

I. It is pleuomorphic bacteria, which lacks cell wall

II. Mycoplasma is the smallest living organism

III. They can-not survive without oxygen

IV. Many mycoplasma are pathogenic in animals and plants

Which of the statements given above are correct?

1) I, II and III 2) II, III and IV
3) I, II and IV 4) I, II, III and IV

53. The protistan cell body contains

I. a well-defined nucleus

II. membrane bound cell organelles

III. flagella or cilia

Correct statement among those written above is

1) I and II 2) I and III
3) II and III 4) I, II and III

54. Which of the following is not a character of Protista?

1) Protists are prokaryotic
2) Some protists have cell walls
3) Mode of nutrition is both autotrophic and heterotrophic
4) Body organization is cellular

55.. Which of the following protist release toxins that may even kill fishes and other marine animal?

1) Euglena 2) Gonyaulax
3) Paramecium 4) Plasmodium

56. Which of the following groups are placed under the kingdom-Protista?

1) Crysophytes
2) Dianoflagellate and euglenoids
3) Slime moulds and protozoans
4) All of the above

57. The thalloid body of a slime mould (Myxomycetes) is known as

1) Protonema 2) Plasmodium
3) Fruiting body 4) Mycelium

58. Ascomycetes is commonly known as

1) Toad stool 2) Sac fungi
3) Imperfect fungi 4) Bracket fungi

59. In Basidiomycetes, the mycelium is

1) Branched and aseptate
2) Branched and septate
3) Unbranched and septate
4) Coenocytic

60. In mushroom, gills are meant for

1) Respiration
2) Nutrition
3) Bears spores which help in reproduction
4) Enhancing buoyancy

61. All of the following fungi belongs to Basidiomycetes, except

1) Agaricus 2) Ustilago
3) Puccinia 4) Alternaria

62. In Deuteromycetes, the mycelium is

1) Septate and branched
2) Septate and unbranched
3) Coenocytic
4) Multinucleated

63. Deuteromycetes reproduces only by asexual spores known as

1) Conidia 2) Endospores
3) Zoospores 4) Heterocyst

64. Protein coat of a virus enclosing nucleic acid is called

1) Plasmid 2) Capsid
3) Vector 4) Genome

65. Contagium vivum fluidum concept of virus was proposed by

1) DJ lvanowsky 2) MW Beijerinck
3) Stanley 4) Robert Hooke

66. In plants, mosaic formation, leaf rolling and curling yellowing and vein clearing are the symptoms of

1) Viral diseases
2) Bacterial diseases
3) Protozoan diseases
4) Fungal diseases

67. Viruses are also known as

1) Nucleoprotein particle 2) Virion
3) Lipoprotein particles 4) Core

68. Retroviruses have genetic material

1) DNA only
2) RNA only
3) DNA or RNA only
4) Either DNA or RNA only

69. Viruses did not find a place in classification since

1) They are not truly living
2) They are non-cellular
3) They are obligate parasite
4) They are pathogenic

70. Bacteriophages kill

1) Fungi 2) Parasites
3) Bacteria 4)Viruses

71. Virus was discovered by whom?

1) Stanley 2) Ivanowski
3) Herelle 4) Beijerinck

72. Viruses and viroids are the non-cellular organisms, which are not characterised in the classification of

1) Whittaker 2) Aristotle
3) Linnaeus 4) Watson

73. Viral genome incorporated into host DNA is called

1) Prophase 2) Prophage
3) Bacteriophage 4) None of these

74.. Virus envelope is known as

1) Capsid 2) Virion
3) Nucleoprotein 4) Core

75. Viroids differ from viruses in having

1) Naked RNA molecules only
2) Naked DNA molecules only
3) Naked DNA packed with viral genome
4) Satellite RNA packed with viral genome

76. Viroids have

1) ssRNA not enclosed by protein coat
2) ssDNA not enclosed by protein coat
3) dsDNA enclosed by protein coat
4) dsRNA enclosed by protein coat

77. Viroids were discovered by

1) TO Diener 2) DJ Ivanowsky
3) MW Beijerinck 4) WM Stanley

78. Lichen is the association of

1) Protista and algae
2) Fungi and bacteria
3) Protista and fungi 4) Algae and fungi

79. Cladonia rangiferina is a/an

1) Algae 2) Lichen
3) Fungus 4) Angiosperm

80. The fungal partner in lichen is called mycobiont whereas algal partner is called

1) Glycobiont
2) Algobiont
3) Phycobiont
4) Often referred as algal partner

81. Insectivorous plants are principally

1) Autotrophic 2) Heterotrophic
3) Parasitic 4) Pathogenic

82. Plants have a/an……in their life cycle

1) Sexual phase only
2) Asexual phase only
3) Alternation of generations
4) Haplontic

83. Which of the following protist release toxins that may even kill fishes and other marine animal?

1) Euglena 2) Gonyaulax
3) Paramecium 4) Plasmodium

84. Animals reserve food material in the form of

1) Glycogen or animal fat
2) Glucose
3) Cellulose 4) Chitin

85. African sleeping sickness is caused by

1) Trypanosoma 2) Leishmania
3) Latimeria 4) Plasodium

86. Protozoans are

1) Heterotrophs 2) Autotrophs
3) Producer 4) Saprophytes

87. Trypanosoma causes

1) Sleeping sickness 2) Cholera
3) Malaria 4) Food poisoning

88. In protozoans like Ameoba and Paramecium, which of the following organelle is found for osmoregulation?

1) Contractile vacuole 2) Mitochondria
3) Nucleus 4) Food vacuole

89. Passive food ingestion in Amoeba is known as

1) Import 2) Invagination
3) Circumfluence 4) Circumvallation

90. In Amoeba, which controls the cytoplasmic osmality?

1) Nucleus
2) Ectoplasm
3) Biurets 4) Contractile vacuole

91. Which of the following unicellular organism has a macro-nucleus for trophic function and one or more micro-nuclei for reproduction?

1) Euglena 2) Amoeba
3) Paramecium 4) Trypanosoma

92. Life cycle of Plasmodium is

1) Monogenetic 2) Digenetic
3) Trigenetic 4) Polygenetic

93. Protozoans are divided into groups. Most suitable word to fill the blank is

1) Three 2) Four 3) Two 4) Eight

94. Mode of feeding in free living protozoan, is

1) Holozoic 2) Saprozoic
3) Both (1) and (2) 4) None of these

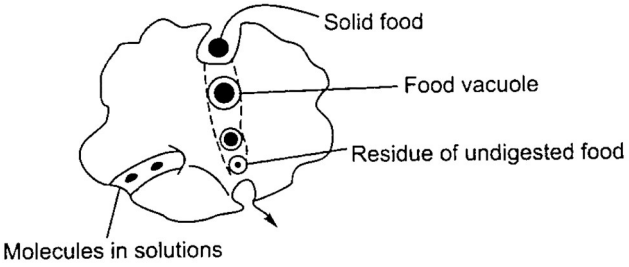
95. Osmoregulation in Paramecium is a function of

1) Contractile vacuole 2) Trichocysts
3) Cytopyge 4) Cytostome

96. Plasmodium

1) Is a malarial parasite
2) Is a filarial parasite
3) Causes sleeping sickness
4) Causes food poisoning

97. In the diagram, which of the following process is/are shown in Amoeba?



1)Exocytosis 2) Phagocytosis
3) Pinocytosis d) All of these

98. Which of the following options describes the coenocytic condition in fungus?

1) Uninucleate hypha without septum
2) Multinucleate hypha without septum
3) Multicellular hypha
4) Multiciliate hypha

99. Which of the following is an edible 'fungi'?

1) Mucor 2) Penicillium
3) Agaricus 4) Rhizopus

100. Mushroom belongs to

1) Ascomycetes 2) Basidiomycetes
3) Phycomycetes 4) Zygomycetes

101. Black stem rust of wheat is caused by

1) Fungi 2) Protozoa
3) Algae 4) Bacteria

102. Red rot of sugarcane is caused by

1) Colletotrichum falcatum
2) Phytophthora infestans
3) Ustilago nuda
4) Alternaria solani

103. Covered smut of barley is caused by

1) Ustilago hordei 2) Tilletia caries
3) Ustilago nuda 4) Colletotrichum falcatum

104. Name the fungus that is edible.

1) Penicillium 2) Mucor
3) Rhizopus 4) Morchella

105. Mucor and Rhizopus are included in class

1) Ascomycetes 2)Phycomycetes
3) Basidiomycetes 4)Deuteromycetes

106. Asexual reproductions in fungi occurs by

1)Ascospores 2)Conidia
3) Basidiospores 4) Oospores

107. Black rust of wheat is a fungal disease caused by

1) Melamspora lint 2) Claviceps purpurea
3) Albugo Candida 4) Puccinia graminis tritici

108. Plasmogamy is the fusion of

1) Two haploid cells including their nuclei
2) Two haploid cells without nuclear fission
3) Sperm and egg
4) Sperm with two polar nuclei

109. Yeast and Penicillium are the example of class

1) Phycomycetes 2) Ascomycetes
3) Deuteromycetes 4) Basidiomycetes

110. Mycorrhiza promotes plant growth by

1) Absorbing inorganic ions from soil
2) Helping the plant in utilizing atmospheric nitrogen
3) Protecting the plant from infection
4) Serving as plant growth regulator

111. The accumulated food reserve in fungi is

1) Protein 2) Starch
3) Glycogen 4) Fat

112. Which of the following is a non-hyphal unicellular fungus?

1) Yeast 2) Puccinia
3) Ustilago 4) Alternaria

113. Cell wall of fungi is made up of

1) Fungal cellulose 2) Hemicellulose
3) Fungal chitin 4) Both (1) and (3)

114. Name the class of the Mycota which is commonly called 'fungi imperfecti'?

1) Deuteromycota 2)Ascomycota
3) Zygomycota 4) Basidiomycota

115. Ergot of rye is caused by a species of

1) Phytophthora 2) Uncinula
3) Ustilago 4) Claviceps

116. Mushroom belongs to class

1) Phycomycetes 2) Zygomycetes
3) Basidiomycetes 4) Deuteromycetes

117. Fungi lack

1) Mitochondria 2) Ribosomes
3) Chloroplast 4) Endoplasmic reticulum

118. Fungi shows vegetative reproduction by all of the following except

1) Fragmentation 2) Fission
3) Budding 4) Akinetes

119. Botanical name of species, which causes white rust of crucifers?

1) Peronospora parasitica
2) Puccinia graminis
3) Pythium debarganum
4) Albugo Candida

120. Basidiospores are produced by

1) Yeasts 2) Diatoms
3) Agaricus 4) Bacteria

121. The fungus without mycelium is

1) Puccinia 2) Phytophthora
3) Rhizopus 4) Saccharomyces

122. Fungi that absorbs soluble organic matter from dead substrates are called

1) Saprophytes 2) Parasites
3) Obligate parasite 4) Lichens

123. The cells of the body of a multicellular fungus are organised into rapidly growing individual filament called

1) Mycelium 2) Rhizoids
3) Hyphae 4) Fibrins

124. Fungi that absorbs nutrients directly from the living host cytoplasm are called

1) Saprophytes 2) Parasites
3) Symbionts 4) Mycorrhiza

125. Which of the following fungus is used extensively in biochemical and genetic work?

1) Neurospora 2) Mucor
3) Rhizopus 4) Aspergillus

126. Which of the following class consists of coenocytic, multinucleate and aseptate mycelium?

1) Basidiomycetes 2) Ascomycetes
3) Phycomycetes 4) Deuteromycetes

127. Mycorrhiza is an example of

1) Symbiosis 2) Parasitism
3) Saprophytism 4) None of these

128 In fungi, the fusion of protoplasms between two motile or non-motile gametes is called

1) Plasmogamy 2) Plasmokinesis
3) Karyogamy 4) Cytokinesis

LEVEL-1 KEY

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
3	2	4	2	1	3	2	4	2	1
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
3	4	1	1	2	3	4	1	2	3
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
1	2	4	3	3		4	3	2	3
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
1	2	1	2	2	3	2	2	1	3
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
3	1	3	1	3	4	1	2	3	2
51	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
3	3	4	1	2	4	2	2	2	3
61	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**
4	1	3	2	2	1	1	2	1	3
71	**72**	**73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**
2	1	2	1	1	1	1	4	2	3
81	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**	**90**
1	3	2	1	1	1	1	1	1	4
91	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**100**
3	2	2	1	1	1	4	2	3	2
101	**102**	**103**	**104**	**105**	**106**	**107**	**108**	**109**	**110**
1	**1**	**1**	**4**	**2**	**2**	**4**	**2**	**2**	**1**
111	**112**	**113**	**114**	**115**	**116**	**117**	**118**	**119**	**120**
3	**1**	**4**	**1**	**4**	**3**	**3**	**4**	**4**	**3**
121	**122**	**123**	**124**	**125**	**126**	**127**	**128**		
4	**1**	**3**	**2**	**1**	**3**	**1**	**1**		

LEVEL-2

1. How many of the given bacteria show heterotrophic mode of nutrition?

Nitrosomonas. Pseudomonas. Lactobacillus Chlorobium. Thiobacillus. Rhizobium

1) Five 2) Three 3) Four 4) One

2. Which of the following statement is correct for wall-less moneran?

1) Cannot live without oxygen

2) Possess both types of nucleic acids

3) Smallest cell with definite shape

4) Mostly saprophytes

3. Read the following statements carefully and choose the incorrect one.

1) Bacteria are the second largest members of kingdom monera

2) Cyanobacteria are unicellular colonial or filamentous forms

3) Comma-shaped bacterium is vibrium

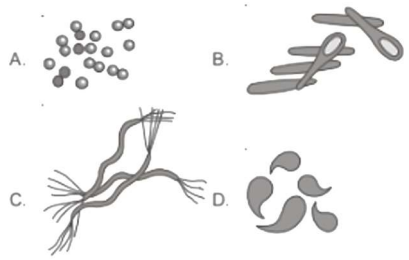
4) BGA often forms blooms in polluted water

4. _____are present in guts of several ruminants.

1) Hatophiles 2) Cyanobacteria

3) Methanogens 4) Thermoacidophiles

5. Choose the correct option for the given below figures



1) A - Always non motile

2) B - Shape of cholera causing bacteria

3) C - Locomotory structure can be microtubular alia or flagella

4) D - Consist of one or more spirals

6. The free living and symbiotic N^, fixing bacteria are respectively

1) Azotobacter Bacillus

2) Azotobacter, Rhizobium

3) Rhizobium: Clostridium

4) Rhodospirillum; Anabaena

7. Purple sulphur bacteria are nutritionally

1) Chemotrophic autotrophs

2) Photolithotrophs

3) Photoorganotrophs

4) Chemolithotrophs

8, Which of the following statement is correct for the ancient bacteria of saline habitats?

1) Obligate anaerobes

2) Heterotrophic mode of nutrition

3) Are able to produce methane

4) Muramic acid is present in cell wall

9. Indestructible cell wall is due to _____ and present in_.

1) Silica, Ceratium and Gymnodinium

2) Cellulose, Physarum

3) Pectin, Diatoms

4) Silica, Melosira

10. "Slime Moulds $\xrightarrow{B}[B]\xrightarrow{C}$ Fruiting bodies".

In the above-mentioned incomplete statement, labelling represents

1) A - Aggregation. B - Plasmodium, C - Suitable conditions

2) A - Suitable conditions, B - Plasmodium. C – Aggregation

3) A - Aggregation, B - Plasmodium. C - Differentiation

4) A - Suitable conditions. B - Pseudoptasmodium. C – Aggregation

11. How many protistans have body covering of pellicle?

Desmids. Euglenoid. Amoeboid protozoans Diatoms, Dinoflagellates, Ciliates, Sporozoan

1) Four 2) Five 3) Three 4) One

12. Virus and viroids have no position in five kingdom system because they

1) Are causal organism of several diseases

2) Don't have the ability to multiply

3) Are noncellular structure

4) Are obligate parasites

13. Causal organism of PSTD

1) Possess free RNA of high molecular weight

2) Was discovered by TO. Diener as inert protein crystal

3) Lacks protein coat

4) Has double stranded RNA of low molecular weight

14. Identify the mismatched pair

	Feature	Bacteria
1)	Most abundant in Nature	Heterotrophic bacteria
2)	Making of curd from Milk	Rod-shaped bacteria
3)	Oxidation of various inorganic substances	Chemosynthetic bacteria
4)	Oxygen evolves during photosynthesis	All photoautotrophic bacteria

15. The most common method of reproduction in bacteria involves

1) Transfer of DNA from one bacterium to another by virus

2) Syngamy and meiosis

3) Amitosis

4) Primitive type of DNA transfer

16. Identify A and B in the given diagram.

1) A - Heterocyst B - Filamentous BGA

2) A - Heterocyst B - Colonial BGA

3) A - Trichome B – Nostoc

4) A - Mucilage sheath B – Spirullina

17. Cyanobacteria have-similar to green plants.

1) Cell wall

2) Reserve food

3) Cell structure 4) Chlorophyll pigment

18. Read the following statements carefully.

A. Live in most harsh habitats

B. Performs oxygenic photosynthesis

C. Lack muramic acid in cell wall

D. Has branched chain lipids in cell membrane

How many of the given statements are correct for archaebacteria?

1) Three

2) One

3) Four 4) Two

19. Which of the following features is incorrect for Mycoplasma?

1) They cannot survive without oxygen

2) They are pathogenic to both plants and animals

3) They have linear double stranded DNA as genetic material

4) They are insensitive to penicillin

20. Choose the correct match from the given table

	Feature	Group	Example
1)	Monerans of hot springs	Archaebacteria	*Methanomonas*
2)	Eubacteria of salty areas	Archaebacteria	*Halococcus*
3)	Oxyphoto bacteria Performing N_2 reduction	Actinomycetes	*Frankia*
4)	Filamentous bacteria with saprobic mode of nutrition	Cyanobacteria	*Anabaena*

21. All were demerits of two kingdom system of classification, except

1) No distinction between prokaryotes and eukaryotes

2) Unicellular and multicellular organisms were not differentiated

3) No distinction between plants and animals

4) Photosynthetic (green algae) and non-photosynthetic (fungi) organisms were placed together

22. Few organisms like *Pseudomonas, Nostoc*; Yeast and seeded plants are placed together in the same kingdom in

1) Two kingdom 2) Three kingdom

3) Five kingdom 4) Six kingdom

23. In which kingdom system of classification unicellular organisms were separated from multicellular organisms irrespective of cell type?

1) Two kingdom 2) Three kingdom

3) Four kingdom 4) Five kingdom

24. According to R.H. Whittaker's system of classification *Chlamydomonas* and *Spirogyra* belong to kingdom

1) Plantae only 2) Protista only

3) Protista and Plantae 4) Protista and Algae

25. Given below is the comparison of kingdom monera and protista. Fill in the blanks and choose the correct option.

S No.	Characters	Monera	Protista
(i)	Cell type	A	Eukaryotic
(ii)	Body organization	Cellular	B
(iii)	Cell wall	C	D

1) A - Prokaryotic C – Absent

2) B - Loose tissue D – Peptidoglycan

3) A - Eukaryotic B – Cellular

4) C - Present D – Present

26. Which kingdom was introduced in four kingdom classification and who proposed it?

1) Protista and Copeland

2) Plantae and Linnaeus

3) Monera and Whittaker

4) Monera and Copeland

27. Select correct match w.r.t. Whittaker's system of classification

Characters	Monera
1) Monera	Unicellular. osmotrophs. producers and decomposers, true cellulosic cell wall
2) Protista	Unicellular, eukaryotic, photoauto-trophs and chemoautotrophs
3) Fungi	Multicellular/loose tissue, eukaryotic, osmotrophs. chitinous wall
4) Animalia	Multicellular, eukaryotic, organ or organ system, holozoic, no saprobic

28. Domain Eukarya includes how many kingdoms (w.r.t six kingdom system)?

1) 2 2) 3 3) 1 4) 4

29. Bacteria are considered primitive organisms because they

1) Possess incipient nucleus

2) Are small, microscopic plants, which are not seen by the naked eyes

3) Cause serious diseases to human being, domesticated animals and crop plants

4) Produce endospores which are very resistant to adverse conditions

30. 70S ribosomes. chromatophores and circular DNA. are found in

1) All eukaryotes

2) All prokaryotes

3) Some prokaryotes

4) Some eukaryotes and some prokaryotes

31. There is no alternation of generation in Escherichia coli because of the absence of

1) Syngamy 2) Reduction division

3) Conjugation 4) Both (1) & (2)

32, Branched chain lipids occur in the cell membranes of

1) Methanobacterium 2) Mycoplasma

3) Actinomycetes 4) Streptomyces

33. Cyanobactena do not possess

1) Gene recombination's

2) Flagella

3) Plasmids 4) Pigments

34. Bacterial cell divides every one minute. It takes 15 minutes a cup to be one-fourth full. How much time will it take to fill the cup?

1) 30 minutes 2) 45 minutes

3) 60 minutes 4) 17 minutes

35. Highly resistance nature of endospore is due to the presence of

1) Dipicolinic acid and peptidoglycan in spore coat

2) Peptidoglycan in exosporium

3) Dipicolinic acid and Ca in cortex

4) Dipicolinic acid and Ca in cell membrane

36. Endospores formed by certain bacteria are actually the means for

1) Reproduction 2) Perennation

3) Bioluminescence 4) Red snow formation

37. Select an incorrect statement for F^+ bacteria

1) It has F plasmid

2) Only somatic pili are present

3) It is considered as donor bacterium

4) It cannot conjugate with another F^+ form

38. Sea water glows during night mainly due to occurrence of

1) Gonyaulax 2) Noctiluca

3) Euglena 4) Cyclotella

39. Rejuvenescent spore of diatom is

1) Haploid and exospore

2) Diploid and statospore

3) Haploid and statospore

4) Diploid and auxospore

40. Leucosin (Chrysdaminarin) is a carbohydrate which is stored as reserve food in case of

1) Diatom 2) Euglena

3) Dinoflagellates 4) Paramoecium

41. Flagellation in Euglena is

1) Uniflagellate and stichonematic

2) Isokont and whiplash type

3) Heterokont and whiplash type

4) Heterokont and stichonematic

42. Special type of red pigment present in the eye-spot of Euglena and Crustacea is called

1) Phycoerythrin 2) Astaxanthin

3) Carotene 4) Xanthophyl!

43. Paraflagellar body of Euglena helps in

1) Locomotion 2) Photoreceptor

3) Reproduction 4) Osmoregulation

44. Difference between red sea and red tide is

1) Red tide takes place in red sea

2) Associated with a cyanobacteria and protist respectively

3) One is by virus and other by bacteria

4) Associated with Rhodophyceae and diatoms respectively

45. Select incorrectly matched pair

1) Mucor mucedo – Coprophilous

2) Albugo Candida - Facultative parasite

3) Agaricus bisporus - Edible basidiocarp

4) Puccinia graminis - Black rust fungi

46. Fungi differs from bacteria in

1) Mode of nutrition

2) Having NAG in cell wall

3) Flagella structure

4) Reserve food material as glycogen

47. Fruiting body in Aspergillus (or Penicillium) is known as

1) Cleistothecium 2) Apothecium

3) Perithecium 4) Ascus

48. The famous Irish famine is related to a disease of potato known as

1) Late blight of potato

2) Early blight of potato

3) Dry rot of potato

4) Potato scab

49. A dolipore septum is a characteristic feature of

1) Phycomycetes 2) Ascomycetes

3) Basidiomycetes 4) Zygomycetes

50. Which one of the following combination of characters is correct for the given fungal group?

1) Algal fungi	- Coenocytic, cellulosic wall, zoospore, zygospore, dikaryophase present
2) Conjugating fungi	- Septate mycelium, chitinous wall, sporangiospore. Shorter (n + n) phase
3) Sac fungi	- Septate mycelium, Ascogonium, Crozier stage, shorter dikaryophase
4) Club fungi	- Shorter primary mycelium stage. No sex organs, dominant dikaryophase, zygosporic meiosis

LEVEL-2 KEY

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
2	2	1	3	1	2	2	2	4	3
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	3	3	4	3	1	4	1	1	2
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
3	1	2	3	4	4	3	4	1	3
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
4	1	2	4	3	2	2	2	4	1
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
4	2	2	2	2	3	1	1	3	3

LEVEL-3(PREVIOUS YEARQUESTIONS)

1. Which of the following statements about methanogens is not correct? [NEET-2019 (Odisha)]

1) They produce methane gas.

2) They can be used to produce biogas.

3) They are found in the rumen of cattle and their excreta

4) They grow aerobically and breakdown cellulose-rich food.

2. Which of the following statements is correct? [NEET-2019 (Odisha)]

1) Lichens are not good pollution indicators.

2) Lichens do not grow in polluted areas.

3) Algal component of lichens is called mycobiont

4) Fungal component of lichens is called phycobiont.

3. Match the organisms in column I with habitats in column II.

	Column-I	Column-II
(a)	Halophiles	(i) Hot springs
(b)	Thermo acidophiles	(ii) Aquatic environment
(c)	Methanogens	(iii) Guts of ruminants
(d)	Cyanobacteria	(iv) Salty areas

Select the correct answer from the options given below [NEET-2019 (Odisha)]

1) (a)-(ii), (b)-(iv), (c), (iii), (d) -(i)

2) (a)-(iv), (b)-(i), (c), (iii), (d) -(ii)

3) (a)-(i), (b)-(ii), (c), (iii), (d) -(iv)

4) (a)-(iii), (b)-(iv), (c), (ii), (d) -(i)

4. Mad cow disease in cattle is caused by an organism which has [NEET-2019 (Odisha)]

1) Free DNA without protein coat

2) Inert crystalline structure

3) Abnormally folded protein

4) Free RNA without protein coat

5. Which one of the following statements is incorrect? [NEET-2019]

1) Morels and truffles are edible delicacies.

2) Claviceps is a source of many alkaloids and LSD.

3) Conidia are produced exogenously and ascospores endogenously.

4) Yeasts have filamentous bodies with long thread-like hyphae.

6. Which of the following statements is incorrect?

1) Viroids lack a protein coat **[NEET-2019]**

2) Viruses are obligate parasites

3) Infective constituent in viruses is the protein coat

4) Prions consist of abnormally folded proteins

7. Match Column - I Column - II [NEET-2019]

	Column-I	Column-II
(a)	Saprophyte	(i) Symbiotic association of fungi with plant roots
(b)	Parasite	(ii) Decomposition of dead organic materials
(c)	Lichens	(iii) Living on living plants or animals
(d)	Mycorrhiza	(iv) Symbiotic association of algae and fungi

Choose the correct answer from the option given below

	(a)	(b)	(c)	(d)
1)	(i)	(ii)	(iii)	(iv)
2)	(iii)	(ii)	(i)	(iv)
3)	(ii)	(i)	(iii)	(iv)
4)	(ii)	(iii)	(iv)	(i)

8. Which of the following organisms are known as chief producers in the oceans? [NEET-2018]

1) Dinoflagellates 2) Diatoms

3) Euglenoids 4) Cyanobacteria

9. Ciliates differ from all other protozoans in [NEET-2018]

1) Using flagella for locomotion

2) Having a contractile vacuole for removing excess water

3) Having two types of nuclei

4) Using pseudopodia for capturing prey

10. Oxygen is not produced during photosynthesis by [NEET-2018]

1) Green sulphur bacteria

2) Nostoc

3) Chara

4) Cycas

11. After karyogamy followed by meiosis, spores are produced exogenously in [NEET-2018]

1) Neurospora 2) Alternaria

3) Saccharomyces 4) Agaricus

12. Select the wrong statement: [NEET-2018]

1) Cell wall is present in members of Fungi and Plantae

2) Mushrooms belong to Basidiomycetes

3) Mitochondria are the powerhouse of the cell in al kingdoms except Monera

4) Pseudopodia are locomotory and feeding structures in Sporozoans

13. Viroids differ from viruses in having: [NEET-2017]

1) DNA molecules with protein coat

2) DNA molecules without protein coat

3) RNA molecules with protein coat

4) RNA molecules without protein coat

14. Which of the following are found in extreme saline conditions? [NEET-2017]

1) Archaebacteria 2) Eubacteria

3) Cyanobacteria 4) Mycobacteria

15. Which among the following are the smallest living cells, known without a definite cell wall, pathogenic to plants as well as animals and can survive without oxygen? [NEET-2017]

1) Bacillus 2) Pseudomonas

3) Mycoplasma 4) Nostoc

16. Which one of the following is wrong for fungi? [NEET (Phasc-2) 2016]

1) They are eukaryotic

2) All fungi possess a purely cellulosic cell wall

3) They are heterotrophic

4) They are both unicellular and multicellular

17. Methanogens belong to [NEET (Phase-2) 2016]

1) Eubacteria 2) Archaebacteria

3) Dinoflagellates 4) Slime moulds

18. Select the wrong statement [NEET (Phase-2) 2016]

1) The walls of diatoms are easily destructible

2) 'Diatomaceous earth' is formed by the eel walls of diatoms

3) Diatoms are chief producers in the oceans

4) Diatoms are microscopic and float passively in water

19. Select the wrong statement

1) Bacterial cell wall is made up of peptidoglycan

2) Pili and fimbriae are mainly involved in motility of bacterial cells

3) Cyanobacteria lack flagellated cells

4) Mycoplasma is a wall-less microorganism

20. Which one of the following statements is wrong? [NEET-2016]

1) Phycomycetes are also called algal fungi

2) Cyanobacteria are also called blue-green algae

3) Golden algae are also called desmids

4) Eubacteria are also called false bacteria

21. Chrysophytes, Euglenoids, Dinoflagellates and Slime moulds are included in the kingdom

1) Animalia 2) Monera [NEET-2016]

3) Protista 4) Fungi

22. One of the major components of cell wall of most fungi is [NEET-2016]

1) Hemicellulose 2) Chitin

3) Peptidoglycan 4) Cellulose

23. The primitive prokaryotes responsible for the production of biogas from the dung of ruminant animals, include the [NEET-2016]

1) Eubacteria 2) Halophiles

3) Thermoacidophiles 4) Methanogens

24. Which of the following statements is wrong for viroids? [NEET-2016]

1) Their RNA is of high molecular weight

2) They lack a protein coat

3) They are smaller than viruses

4) They cause infections

25. Choose the wrong statement [Re-AIPMT-2015]

1) Yeast is unicellular and useful in fermentation

2) Penicillium is multicellular and produces antibiotics

3) Neurospora is used in the study of biochemical genetics

4) Morels and truffles are poisonous mushrooms

26. In which group of organisms the cell walls form two thin overlapping shells which fit together? [Re-AIPMT-2015]

1) Slime moulds 2) Chrysophytes

3) Euglenoids 4) Dinoflagellates

27. Choose the wrong statement [Re-AIPMT-2015]

1) Mosaic disease in tobacco and AIDS in human being are caused by viruses

2) The viroids were discovered by D.I. Ivanowski

3) W M. Stanley showed that viruses could be crystallized

4) The term Contagium vivum fluidum was coined by M W. Beijerinek

28. The imperfect fungi which are decomposers of litter and help in mineral cycling belong to: [Re-AIPMT-2015]

1) Ascomycetes 2) Deuteromycetes

3) Basidiomycetes 4) Phyoomycetes

29. Pick up the wrong statement [Re-AIPMT-2015]

1) Nuclear membrane is present in Monera

2) Cell wall is absent in Animalia

3) Protista have photosynthetic and heterotrophic modes of nutrition

4) Some fungi are edible

30. Which one of the following matches is correct? [AIPMT-2015]

1)	*Agaricus*	Parasite fungus	Basidiomycetes
2)	*Phyto-phthora*	Aseptate mycelium	Basidiomycetes
3)	*Altemaria*	Sexual reproduction absent	Deuteromycetes
4)	*Mucor*	Reproduction by conjugation	Ascomycetes

31. The guts of cow and buffalo possess [AIPMT-2015]

1) Cyanobacteria 2) Fucus spp.
3) Chlorella spp. 4) Methanogens

32. Five kingdom system of classification suggested by R H Whittaker is not based on [AIPMT-2014]

1) Presence or absence of a well-defined nucleus
2) Mode of reproduction
3) Mode of nutrition
4) Complexity of body organization

33. Archaebacteria differ from eubacteria in

1) Cell membrane structure **[AIPMT-2014]**
2) Mode of nutrition
3) Cell shape
4) Mode of reproduction

34. Which of the following shows coiled RNA strand and capsomeres? [AIPMT-2014]

1) Polio virus 2) Tobacco mosaic virus
3) Measles virus 4) Retrovirus

35. Viruses have [AIPMT-2014]

1) DNA enclosed in a protein coat
2) Prokaryotic nucleus
3) Single chromosome
4) Both DNA and RNA

36. The motile bacteria are able to move by: [AIPMT-2014]

1) Fimbriae 2) Flagella
3) Cilia 4) Pili

37. Pigment-containing membranous extensions in some cyanobacteria are [NEET-2013]

1) Basal bodies
2) Pneumatophores
3) Chromatophores
4) Heterocysts

38. Which statement is wrong for viruses? [AIPMT (Prelims)-2012]

1) They have ability to synthesize nucleic acids and proteins
2) Antibiotics have no effect on them
3) All are parasites
4) All of them have helical symmetry

39. The cyanobacteria are also referred to as [AIPMT (Prelims)-2012]

1) Slime moulds 2) Blue green algae
3) Protists 4) Golden algae

40. Which one single organism or the pair of organisms is correctly assigned to its or their named taxonomic group? [AIPMT (Prelims)-2012]

1) Yeast used in making bread and beer is a fungus
2) Nostoc and Anabaena are examples of protista
3) Paramecium and Plasmodium belong to the same kingdom as that of Penicillum
4) Lichen is a composite organism formed from the symbiotic association of an algae and a protozoan

41. How many organisms in the list given below are autotrophs?

Lactobacillus, Nostoc, Chara, Nitrosomonas, Nitrobacter, Streptomyces, Saccharomyces, Trypanosoma, Porphyra, Wolfia [AIPMT (Mains)-2012]

1) Four 2) Five 3) Six 4) Three

42. In the five-kingdom classification. Chlamydomonas and Chlorella have been included in [AIPMT (Mains)-2012]

1) Protista 2) Algae
3) Plantae 4) Monera

43. Which one of the following organisms is not an example of eukaryotic cells?
[AIPMT (Prolims)-2011]
1) Amoeba proteus 2) Paramecium caudatum
3) Escherichia coli 4) Euglena viridis

44. Membrane-bound organelles are absent in
[AIPMT (Prelims)-2010]
1) Plasmodium 2) Saccharomyces
3) Streptococcus 4) Chlamydomonas

45. Single-celled eukaryotes are included in
[AIPMT (Prelims)-2010]
1) Monera 2) Protista
3) Fungi 4) Archaea

46. Virus envelope is known as
[AIPMT (Prelims)-2010]
1) Core 2) Capsid
3) Virion 4) Nucleoprotein

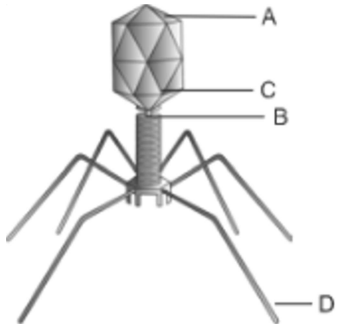
47. Algae have cell wall made up of
[AIPMT (Prelims)-2010]
1) Cellulose, hemicellulose and pectins
2) Cellulose, galactans and mannans
3) Hemicellulose, pectins and proteins
4) Pectins, cellulose and proteins

48. Some hyperthermophilic organisms that grow in highly acidic (pH = 2) habitats belong to the two groups [AIPMT (Prelims)-2010]
1) Liverworts and yeasts
2) Eubacteria and archaea
3) Cyanobacteria and diatoms
4) Protists and mosses

49. Infectious proteins are present in [AIPMT (Prelims)-2010]
1) Satellite viruses
2) Gemini viruses
3) Prions 4) Viroids

50. Black (stem) rust of wheat is caused by : [AIPMT (Mains)-2010]
1) Alternana solani
2) Ustilago nuda
3) Puccinia graminis
4) Xanthomonas oryzae

51. Given below is the diagram of a bacteriophage. In which one of the options all the four parts A. B.C and D are correct?



	A	B	C	D
1)	Tail fibres	Head	Sheath	Collar
2)	Sheath	Collar	Head	Tail fibres
3)	Head	Sheath	Collar	Tail fibres
4)	Collar	Tail fibres	Head	Sheath

52. Select the correct combination of the statements (a-d) regarding the characteristics of certain organisms
(a) Methanogens are Archaebacteria which produce methane in marshy areas
(b) Nostoc is a filamentous blue-green a*ga which fixes atmospheric nitrogen.
(c) Chemosynthetic autotrophic bacteria synthesize cellulose from glucose.
(d) Mycoplasma lack a cell wall and can survive without oxygen
The correct statement are
[AIPMT (Mains)-2010]
1) (b), (c) 2) (a), (b),(c)
3) (b), (c). (d) 4) (a), (b), (d)

53. T.O Diener discovered a

[AIPMT (Prelims-2009) & (Mains-2010)]

1) Free infectious DNA

2) Infectious protein

3) Bacteriophage

4) Free infectious RNA

			LEVEL-3 KEY						
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
4	2	2	3	4	3	4	2	3	
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
4	4	4	1	3	2	2	1	2	4
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
3	2	4	1	4	2	2	2	1	3
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
4	2	1	2	1	2	3	4	2	1
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
3	1	3	3	2	2	2	2	3	3
51	**52**	**53**							
3	4	4							

PLANT KINGDOM

LEVEL-1

1. **The system of classification which had separated closely related species as they were based on a few characteristics is**
   1) Phylogenetic system
   2) Artificial system
   3) Natural system
   4) More than one option is correct
2. **In numerical taxonomy**
   1) All characters are given equal weightage
   2) Chemical constituents of plants are given prime importance
   3) Statistical analysis of data is avoided
   4) Number and codes are not assigned to characters
3. **Plants which act as soil binders and also frequently grown as ornamentals are**
   1) Vascular cryptogams
   2) Non-embryophytes
   3) Non-vascular archegoniates
   4) Algae
4. **Zygote produces a multicellular well differentiated independent sporophyte in**
   1) Polytrichum and Selaginella
   2) Ectocarpus and Funaria
   3) Selaginella and Lycopodium
   4) Cycas and Funaria
5. **Which of the following feature(s) is/are necessary for seed formation?**
   1) Integumented megasporangium
   2) Development of zygotes into young embryos within female gametophytes
   3) Heterospory
   4) More than one option is correct
6. **Mark the incorrect match (w.r.t. ploidy level)**
   1) Gemma cell in Marchantia - Haploid
   2) Meristem of dicot - Diploid
   3) Ovum of a liverwort - Haploid
   4) Synergid – Diploid
7. **Which branch of taxonomy is based on chromosome number, structure and behaviour?**
   1) Numerical taxonomy
   2) Cytotaxonomy
   3) Chemotaxonomy
   4) Phylogeny
8. **Zoospores are a spores which are commonly found in b.**
   1) a - Asexual, b - Algae
   2) a - Sexual, b – Fungi
   3) a - Asexual, b - Bryophytes
   4) a - Sexual, b – Cyanophyceae
9. **In bryophytes meiosis takes place in**
   1) Sex organs
   2) Zygote
   3) Capsule of sporophyte
   4) Protonema
10. **The mentioned features in the given box are related with the class of algae, examplified by**
    Starch as stored food, isokont and apical flagellation
    1) Sargassum, Laminaria
    2) Ectocarpus, Porphyra
    3) Ulothrix, Chlamydomonas
    4) Porphyra, Polysiphonia

11. Floridean starch is very similar to__in structure and found in_.

1) Amylopectin, Gracilaria

2) Amylopectin, Laminaria

3) Glycogen, Volvox

4) Glucose, Sargassum

12. Choose the incorrect match w.r.t. hydrocolloids

1) It is present in the cell wall of both red algae and brown algae

2) Carrageen is produced by brown algae

3) Algin is produced by brown algae

4) Agar is one such commercial product obtained from Gelidium

13. Unicellular algae rich in proteins are

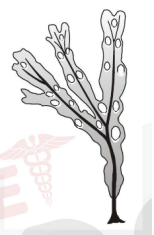
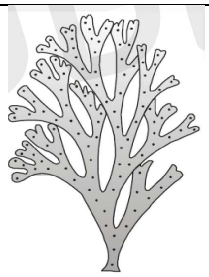
1) Spirulina and Ulothrix

2) Spirogyra and Fucus

3) Chlorella and Spirulina

4) Dictyota and Chlorella

14. Select the incorrect match

1)		Green algae, presence of pyrenoids, starch is the reserve food
2)		Red algae, presence of phycoerythrin pigment
3)		Green algae, Fucoxanthin pigment, sulphated phycocolloids
4)		Brown algae, two flagella in zoospore

15. Nitrogen fixing cyanobacteria is associated with

1) Mycorrhizal roots of Pinus

2) Coralloid roots of Cycas

3) Roots of Selaginella

4) Roots of Sequoia

16. Phaeophyceae does not include

1) Filamentous forms

2) Large massive forms

3) Unicellular forms

4) Parenchymatous forms

17. Red algae reproduce sexually and asexually respectively by

1) Motile gametes and non-motile spores

2) Motile spores and non-motile gametes

3) Non-motile spores and non-motile gametes

4) Non-motile gametes and non-motile spores

18. If the number of chromosomes in the spore mother cell of a bryophyte is 12, the number of chromosomes in its protonema, rhizoid and foot of sporophyte respectively would be

1) 6, 12, 12 2) 6, 6, 12

3) 12, 12, 6 4) 6, 12, 6

19. Read the following statements w.r.t. bryophytes

A. The plant body is more differentiated than pteridophytes.

B. They produce biflagellate antherozoids.

C. Zygote does not undergo meiotic division immediately.

D. Spores represent the first cell of sporophytic generation.

1) A & D are incorrect

2) Only A in incorrect

3) All are correct

4) Only D is incorrect

20. Bryophytes differ from algae in

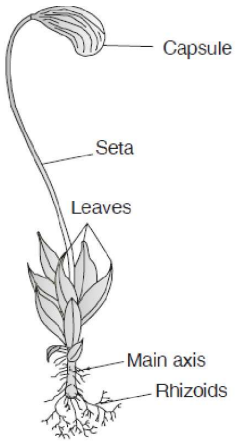
1) Presence of a well developed independent sporophyte

2) Presence of an embryo stage

3) Absence of archegonia

4) Absence of vascular tissue

21. Which of the following statements is not a feature of the given plant ?



1) The first stage is the protonema stage which develops from a spore

2) It has multicellular unbranched rhizoids

3) They have an elaborate mechanism of spore dispersal

4) The sporophyte consists of foot, seta and capsule

22. The main plant body of bryophyte is A . It produces B hence is also called as C .

1) A -	Diploid	B	- Spores	C-	Sporophyte
2) A -	Diploid	B	- Gametes	C-	Sporophyte
3) A -	Haploid	B	- Gametes	C-	Gametophyte
4) A-	Haploid	B	- Spores	C-	Gametophyte

23. Gemmae of Marchantia

1) Are green and unicellular

2) Become detached from the parent body and germinate to form new individuals

3) Are diploid and brown in colour

4) Develop in large receptacles

24. Choose the correct option w.r.t. importance of moss.

1) Trans-shipment of materials

2) Prevention of soil erosion

3) Resists forest fires

4) More than one option is correct

25. Which of the following pair is incorrectly matched?

1) Psilopsida - Psilotum

2) Lycopsida – Lycopodium

3) Sphenopsida - Selaginella

4) Pteropsida – Dryopteris

26. The living pteridophytes are restricted to narrow geographical regions because

1) Sporophytic plant body in not well adapted to grow in terrestrial region

2) Gametophytes require cool, damp and shady places to grow

3) They are homosporous

4) More than one option is correct

27. Choose the correct option w.r.t. heterosporous pteridophytes

1) Dryopteris, Selaginella

2) Selaginella, Equisetum

3) Salvinia, Selaginella

4) Salvinia, Cycas

28. Which of the following is a feature of Selaginella but not that of Pinus?

1) Heterospory (2) Presence of xylem

3) Need water for fertilization

4) Presence of archegonia

29. Select the most appropriate option w.r.t. the following figure

1) Aquatic fern 2) Terrestrial fern

3) Seeded plant 4) Non-vascular fern

30. In the mentioned features, how many are not related with gymnosperms?

Phloem, Heterospory, Sporophylls, Seed, Archegonia, Ovule, Ovary

1) Two 2) One 3) Three 4) Four

31. Which of the following is not a feature of Cycas?

1) Naked seeded plant

2) Unbranched stem

3) Needle like leaves

4) Pinnately compound leaves

32. The reduced male gametophyte in gymnosperm is called

1) Microsporangia 2) Pollen grain

3) Microsporophyll 4) Male cone

33. Mark the incorrect statement w.r.t. conifers

1) Presence of heterospory

2) Presence of thick cuticle and sunken stomata

3) Development of free living gametophytes

4) Presence of secondary growth

34. Which of the following cells degenerate after fertilisation in flowering plants?

1) Synergids

2) Polar nuclei

3) Antipodals

4) More than one option is correct

35. Mark the odd one (w.r.t triple fusion)

1) Eucalyptus 2) Wolfia

3) Mangifera 4) Cedrus

36. Zygote, ovule and ovary in angiosperms form_respectively.

1) Embryo, seed and fruit

2) Fruit, cotyledon, seed

3) Embryo, fruit, seed

4) Embryo, fruit, cotyledons

37. Match Column I with Column II

	Column I	Column II
a.	Ovule	i. Female gametophyte
b.	Pollen grain	ii. Megasporangium
c.	Embryo sac	iii. Microspore
d.	PEN	iv. Endosperm

1) a(i), b(ii), c(iii), d(iv)

2) a(ii), b(iii), c(i), d(iv)

3) a(iii), b(ii), c(i), d(iv)

4) a(iv), b(ii), c(i), d(iii)

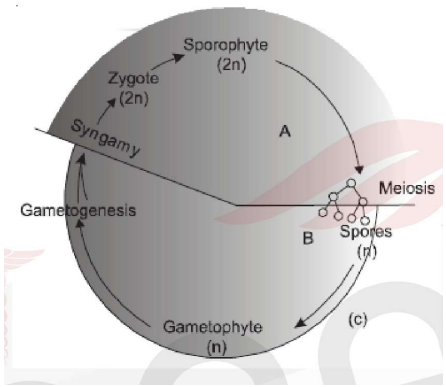
38. W.r.t. the following mentioned organisms, how many of them have haplontic, diplontic and haplo-diplontic life cycle respectively?

Spirogyra, Polysiphonia, Ectocarpus Sphagnum, Chlamydomonas, Ficus, Cycas

1) 2, 3, 2 2) 3, 2, 2

3) 2, 2, 3 4) 1, 4, 2

39. Which of the plant (options 1-4) do not exhibit the following life cycle?



1) Selaginella, Sphagnum

2) Polytrichum, Pteris

3) Pinus, Ficus

4) Lycopodium, Adiantum

40. Haplontic life cycle in Chlamydomonas

1) Exhibits zygotic meiosis

2) Form spores by mitosis

3) Sporophytic generation represented by zygote

4) More than one option is correct

41. Diplontic type life cycle pattern is present in

1) Spirogyra 2) Ectocarpus

3) Cycas 4) Polysiphonia

42. A. Most algal genera show haplontic life cycle.

B. Asexually reproducing plants exhibit alternation of generation.

C. All bryophytes have totally or partially dependent sporophyte.

D. All seed bearing plants have diplontic life cycle.

1) Only C is incorrect

2) B & D are incorrect

3) All are correct, except B

4) A & C are incorrect

LEVEL-1 KEY

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
2	1	1	3	4	4	2	1	3	3
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	2	3	3	2	3	4	2	1	2
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
2	3	2	4	2	2	3	3	1	2
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
3	2	3	4	4	1	2	3	3	4
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
3	3								

LEVEL-2

1. Find out the correct sequence (w.r.t. size of male gametophyte in decreasing manner)

1) Zea mays, Eucalyptus, Pteris

2) Selaginella, Pinus, Mangifera

3) Marchantia, Triticum, Spirogyra

4) Dryopteris, Sphagnum, Ulothrix

2. Consider the following structures/characters:

(i) Multicellular asexual buds

(ii) Protonema stage

(iii) Sporic metosis

(iv) Multiflagellate sperms

(v) Vascular amphibians of plant kingdom

The structures/characters concerned with the life cycle of liverworts are:

1) (i), (iii) and (v) 2) (iii) & (v)

3) (ii), (iv) & (v) (4) (ii) & (iii)

3. Beginning with germination of spores life cycle of Dryopteris. what is the sequence of structures that develop after germination?

(a) Spore mother cell (b) Sporophyte plant

(c) Gametes (d) Gametophyte

(e) Embryo (f) Zygote

(1) (a), (c), (f), (e) & (b)

(2) (a), (d), (c), (f), (e) & (b)

(3) (d), (c), (f), (b), (e) & (a)

(4) (d), (c), (f), (e), (b) & (a)

4. The spread of living pteridophytes is limited and restricted to narrow geographical regions because

(i) Gametophyte is inconspicuous, multicellular and free-living

(ii) They have delicate and graceful foliage structure

(iii) Sperms require an external supply of water for swimming and reaching the non-jacketed female sex organ

(iv) Gametophytes require cool, damp and shady places to grow Mark the correct option(s)

(1) (iii) & (v) (2) (i),(iii)&(iv)

(3) (ii) & (iv) (4) Only (iv)

5. Focus and Volvox resemble each other in presence of

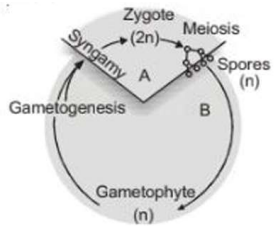
1) Non-sulphated phycocolloids in cell wall

2) Internal fertilisation and gametic meiosis

3) Large and non-motile female gamete in oogonium

4) Air bladders in the region of branching

6. See the given life-cycle pattern and choose the option which correctly represent the characters for the organism.



1) Chara - Zygotic meiosis, free living sporophyte

2) Chlamydomonas Haplontic lifecycle, sporic meiosis

3) Spirogyra Haplontic lifecycle, no multi celled sporophyte

4) Ulothrix - Gametic meiosis. diplontic lifecycle

7. Go through the following matches

(a) Spirullina - Rich source of protein

(b) Gelidium - Polysulphate esters in cell wall

(c) Chara - Unicellular green alga

(d) Polysiphonia - Haplontic life cycle

Which of these are correct?

1) (b) & (c) 2) (a) & (b)

3) (c) & (d) 4) (a), (b) & (c)

8. In which of the following set of plants, development of 7 celled and 8 nucleated gametophyte is preceded by reduction division as well as mitosis?

1) Pteris. Adiantum

2) Pisum, Eucalyptus

3) Chlamydomonas, Dryopteris

4) Azolla, Ficus

9. Branch of taxonomy in which DNA sequences, alkaloids, crystals may help in knowing relationships among organisms is

1) Karyotaxonomy 2) Chemotaxonomy

3) Cytotaxonomy 4) Morphotaxonomy

10. All statements are true for both ferns and conifers, except

1) True stem, leaves and roots in main plant body

2) Independent free living existence of gametophytes

3) Archegoniate embryophytes

4) Oogamous sexual reproduction

11 How many of the following feature(s) is/are commonly concerned with Pinus as well as Cycas?

(a) Pinnate leaves (b) Mycorrhiza

(c) Branched stem (d) Wind pollination

(e) Female strobili (f) Non-motile sperms

(g) Simple leaves (h) Naked ovule

Mark the correct option.

1) Four 2) Three 3) Two 4) One

12. Ferns and mosses resemble in possessing

1) Large sized true leaves

2) Unicellular rhizoids

3) Haplo-diplontic life cycle pattern

4) Gametic meiosis in lifecycle

13. Which of the following is a wrong combination?

1) Cell wall is made up of cellulose and algin - Brown algae

2) Strobilus. haplontic life cycle, biflagellate sperm - Horsetails

3) Non motile gametes - Red algae

4) Coralloid roots, dioecious - Cycadales plants

14. What will be the number of chromosomes in endosperm (p) and perisperm (q) If there are 12 chromosomes in venter canal cell of a conifer?

1) (p) 36, (q) 24 2) (p) 24. (q) 24

3) (p) 36, (q) 12 4) (p) 12. (q) 24

15. In which of the following plant (s). dominant phase is the independent, photosynthetic. thalloid, dorsiventral haploid gametophyte which alternates with the short-lived multicelled sporophyte totally dependent on gametophyte?

1) Funaria. Sphagnum 2) Marchantia, Riccia

3) Pteris, Porella 4) Both (1) & (2)

16. Heterosporous vascular cryptogams fail to develop seeds because

1) Female gametes are large and non-motile

2) Retention of megaspores permanently within the megasporangia has not become established

3) Fusion of gametes results in formation of zygote which develops into embryo

4) They lack precocious germination of spores

17. Which of the following structure/feature is common in Volvox. mosses, ferns and conifers?

1) True leaves

2) Vascular bundles

3) Embryo 4) Oogamous reproduction

18. Ginkgo and Cedrus are included in gymnosperms because

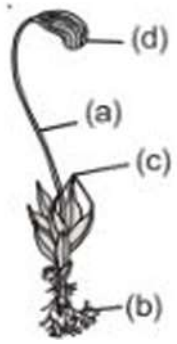
1) Ovary is not enclosed by any wail and remains exposed, both before and after fertilisation

2) Seeds are not protected by seed coats

3) Seeds do not occur inside the fruit

4) Both (2) and (3)

19. Given picture is of a bryophyte. The correct ploidy levels of the indicated structures are



1) (a): 2n, (b): 2n, (c): n, (d): n

2) (a): n. (b) : n, (c): n, (d): 2n

3) (a): 2n, (b): n, (c): n, (d): 2n

4) (a): 2n. (b): n, (c): 2n, (d): 2n

20. If a root cell of a pteridophyte contains 10 chromosomes, then the chromosome number in its leaf cell, sperm mother cell and spore mother cell respectively is

1) 10, 10, 10 2) 5, 10, 10

3) 10, 5, 10 4) 10, 5, 5

21. Vascular phanerogams with naked seeds have

1) Haploid phase which is independent and free living

2) Reproductive leaves aggregated to form cones or strobilus

3) Pyrenoids in their chloroplast

4) Glycogen as stored food

22. Selaginella and Salvinia have/are

1) Unisexual gametophytes

2) Produce only one types of spores

3) Unicellular thalloid gametophyte

4) Terrestrial heterosporous ferns

23. Fertilisation is siphonogamous with non-motile male gametes in

1) Adiantum and Gnetum

2) Ficus and Fucus

3) Cycas and Dryopteris

4) Pinus and Calotropis

24. Sexual reproduction is oogamous in

1) Volvox and Fucus

2) Spirogyra and Ulothrix

3) Potysiphonia and Spirogyra

4) Ulothrix and Chara

25. Pollination in gymnosperm is

1) Anemophilous and indirect

2) Hydrophilous and direct

3) Anemophilous and direct

4) Entomophilous and direct

26. Sexual system of classification is

1) Artificial system

2) Based on stamens characters

3) Based on corolla and carpels characters

4) Both (1) & (2)

27. The Bentham and Hooker s classification is

1) Classification of taxa based on actual examination

2) Artificial system of classification

3) Phylogenetic system of classification

4) Based on evolution

28. The thallus organisation of Volvox is

1) Multicellular and coccoid

2) Colonial and nonflagellate

3) Unicellular

4) Colonial and motile

29. Brown algae are quite common in

1) Fresh water habitats
2) Tropical sea water
3) Temperate sea water
4) Both (2) & (3)

30. Algae with floridean starch as reserve food material is also characterised by

1) Presence of chlorophyll b
2) Stacked thylakoids
3) Nonsulphated phycocolloids
4) Nonflagellate nature

31. 100 zygospores, alternate with empty cells in Spirogyra are under_conjugation and the total number of daughter filaments formed will be_

1) Scalariform, 400
2) Lateral, 100
3) Lateral, 400
4) Scalariform, 100

32. Algin is a phycocolloid, obtained from the cell wall of

1) Macrocystis and Porphyridium
2) Mastigocladus and Laminaria
3) Microcystis and Nereocystis
4) Macrocystis and Fucus

33. Which of the following is a red alga that is not red?

1) Nemalion 2) Potysiphonia
3) Gelidium 4) Batrachospermum

34. In chlorophyceae. the flagella are

1) Tinsel type
2) Whiplash type
3) Whiplash and tinsel type
4) Basal tinsel, apical whiplash type

35. Which of the following are useful for curing goitre?

1) Sea kelps 2) Diatoms
3) Red algae 4) Porphyra

36. Non-motile gametes are characteristically found in

1) Cyanophyta 2) Rhodophyta
3) Phaeophyta 4) Chlorophyta

37. The female sex organ in red algae is flask shaped and is known as

1) Trichogyne 2) Carpogonium
3) Spermatium 4) Archegonium

38. Some characters of algae are given below

a. Floridean starch
b. Sulphated phycocolloids in cell wall
c. Alginic acid
d. Trumpet hypha
e. Haplodiptontic life cycle
f. Isomorphic alternation of generation
g. Fucoxanthin
h. Phycoerythnn
i. Zygotic meiosis
j. Two anterior flagella

Which of the given set of characters belongs to Laminaria?

1) a, b, e, f, h 2) c, d, e, g
3) b, c, d, e, f, g, i 4) c, d, e, f, g, i

39. Bryophytes are not characterised by

1) Sporophyte parasitic over gametophyte
2) Independent gametophyte
3) Absence of vascular tissues
4) Independent sporophyte

40. Stems and leaves of bryophytes are

1) Analogous to vascular plants
2) Homologous to vascular plants
3) Analogous to algae & fungal thallus
4) None of these

41. Non-vascular embryophyte with leaves is

1) Riccia 2) Porella

3) Selaginella 4) Macrocystis

42. Find set of features related to Funaria

a. Protonema

b. Prothallus

c. Gametophore

d. Thallus body

e. NCC in antheridium

f. Haplodiplontic life cycle

g. True plant organs in sporophyte

h. Fragmentation

1) b, d, e, g 2) a, d, f, g

3) a, c, f, g, h 4) a, c, f, h

43. In Funaria. 20 chromosomes are present in rhizoids. then the number of chromosome in calyptra. theca and foot will be

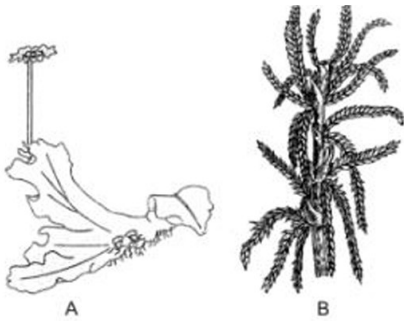
1) 20, 40, 40 respectively

2) 40, 20, 20 respectively

3) 20, 40, 20 respectively

4) 40, 10, 20 respectively

44. Identify the plants A and B in the figures given below



1) A - Female Marchantia. B – Sphagnum

2) A - Riccia, B – Marchantia

3) A - Marchantia, B – Funaria

4) A - Male Marchantia, B – Sphagnum

45. Algae, bryophytes and pteridophytes resemble with each other in which one of the following feature?

1) Gametophytic plant body

2) Dependence on water for fertilisation

3) Haplontic alternation of generation

4) Presence of embryo

46. Find correct statement for the prothallus of fern

1) Monoecious, protandrous with multicellular rhizoides

2) Monoecious, protandrous with unicellular rhizoides

3) Dioecious with unicellular rhizoides

4) Monoecious, protandrous with apical antheredia and basal archegonia on ventral surface

47. The dominant photosynthetic phase in the life cycle of pteridophyta is equivalent to the

1) Gametophytic phase of bryophyta

2) Sporophytic phase of bryophyta

3) Gametophytic phase of pteridophytes

4) Gametophytic phase of gymnosperm

48. In Pteridophytes reduction division occurs when

1) Prothallus is formed

2) Sex organs are formed

3) Spores are formed

4) Gametes are formed

49. The evolutionary advanced features of Selaginella are

(a) Heterospory

(b) Endosporic development of gametophyte

(c) Reduced gametophyte

(d) Localization of sporangium bearing appendages in strobili

(e) Unisexual gametophytes

(f) Fertilization with the help of water

1) All are correct

2) All except (f) is correct

3) All except (e) and (f) are correct

4) All except (c) is correct

50. How many structures listed below are diploid for a typical fem member?

a. Indusium cell b Stomium cell

c. NCC d. Rhizome cell

e. Sporophyll cell f. Prothallus cell

g. SMC h. Spore

i. Antherozoid mother cell

1) Nine 2) Six 3) Five 4) Seven

LEVEL-2 KEY

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
2	4	4	4	3	3	2	2	2	2
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
3	3	2	4	2	2	4	3	3	3
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
2	1	4	1	3	4	1	4	3	4
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
2	4	4	2	1	2	2	2	4	1
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
2	4	1	4	2	2	1	3	2	3

LEVEL-3 (Previous Year Question'S)

1. From evolutionary point of view, retention of the female gametophyte with developing young embryo on the parent sporophyte for some time is first observed in [NEET-2019]

1) Liverworts 2) Mosses

3) Pteridophytes 4) Gymnosperms

2. Which one is wrongly matched? (NEET-2018)

1) Uniflagellate gametes – Polysiphonia

2) Biflagellate zoospores - Brown algae

3) Unicellular organism – Chlorella

4) Gemma cups - Marchantia

3. Winged pollen grains are present in

1) Mustard 2) Cycas **[NEET-2018]**

3) Pinus 4) Mango

4. Which of the following statements is correct? [NEET-2018]

1) Ovules are not enclosed by ovary wall in gymnosperms

2) Selaginella is heterosporous, while Salvinia is homosporous

3) Stems are usually unbranched in both Cycas and Cedrus

4) Horsetails are gymnosperms

5. Select the mismatch : [NEET-2017]

1) Pinus - Dioecious

2) Cycas - Dioecious

3) Salvinia – Heterosporous

4) Equisetum- Homosporous

6. An example of colonial alga is [NEET-2017]

1) Chlorella 2) Volvox

3) Ulothrix 4) Spirogyra

7. Life cycle of Ectocarpus and Fucus respectively are [NEET-2017]

1) Haplontic, Diplontic

2) Diplontic. Haplodiplontic

3) Haplodiplontic. Diplontic

4) Haplodiplontic. Haplontic

8. Conifers are adapted to tolerate extreme environmental conditions because of

1) Broad hardy leaves **[NEET (Phase-2) 2016]**

2) Superficial stomata

3) Thick cuticle

4) Presence of vessels

9. Which one of the following statements is wrong? [NEET (Phase-2) 2016]

1) Algae increase the level of dissolved oxygen In the immediate environment

2) Algin is obtained from red algae, and carrageenan from brown algae

3) Agar-agar is obtained from Gelidium and Gracilaria

4) Laminaria and Sargassum are used as food

10. Select the correct statement [NEET-2016]

1) The leaves of gymnosperms are not well adapted to extremes of climate

2) Gymnosperms are both homosporous and heterosporous

3) Salvinia. Ginkgo and Pinus all are gymnosperms

4) Sequoia is one of the tallest trees

11. Which one is a wrong statement? [Re-AJPMT-2015]

1) Brown algae have chlorophyll a and c. and fucoxanthin

2) Archegonia are found in Bryophyta. Pteridophyta and Gymnosperms

3) Mucor has biflagellate zoospores

4) Haploid endosperm is typical feature of gymnosperms

12. Read the following five statements (A to E) and select the option with all correct statements

(A) Mosses and Lichens are the first organisms to colonise a bare rock. **[AIPMT-2015]**

(B) Selaginella is a homosporous pteridophyte.

(C) Coralloid roots in Cycas have VAM

(D) Main plant body in bryophytes is gametophytic. whereas in pteridophytes it is sporophytic.

(E) In gymnosperms. male and female gametophytes are present within sporangia located on sporophyte

1) (B), (C) and (E) 2) (A), (C) and (D)

3) (B), (C) and (D) 4) (A), (D) and (E)

13. In which of the following gametophyte is not independent free living? (AIPMT-2015]

1) Pinus 2) Funaria

3) Marchantia 4) Pteris

14 Which one of the following statements is wrong? [AIPMT-2015]

1) Mannitol is stored food in Rhodophyceae

2) Algin and carrageen are products of algae

3) Agar-agar is obtained from Gelidium and Gracilaria

4) Chlorella and Spirulina are used as space food

15. Male gametes are flagellated in: [AIPMT-2015]

1) Spirogyra 2) Polysiphonia

3) Anabaena 4) Ectocarpus

16. Which of the following is responsible for peat formation? [AJPMT-2014]

1) Marchantia 2) Riccia

3) Funaria 4) Sphagnum

17. Male gametophyte with least number of cells is present in [AIPMT-2014]

1) Pteris 2) Funaria

3) Lilium 4) Pinus

18. Which one of the following shows isogamy with non-flagellated gametes? [AIPMT-2014]

1) Sargassum 2) Ectocarpus

3) Ulothrix 4) Spirogyra

19 Select the wrong statement [NEET-2013]

1) Anisogametes differ either in structure, function or behaviour

2) In Oomycetes female gamete is smaller and motile, while male gamete is larger and non-motile

3) Chlamydomonas exhibits both isogamy and anisogamy and Fucus shows oogamy

4) Isogametes are similar in structure, function and behaviour

20. Monoecious plant of Chara shows occurrence of [NEET-2013]

1) Stamen and carpel on the same plant

2) Upper antheridium and lower oogonium on the same plant

3) Upper oogonium and lower antheridium on the same plant

4) Antheridiophore and archegoniophore on the same plant

21. Read the following statements (A-E) and answer the question which follows them

(A) In liverworts, mosses and ferns gametophytes are free-living.

(B) Gymnosperms and some ferns are heterosporous

(C) Sexual reproduction in Fucus, Volvox and Albugo is oogamous

(D) The sporophyte in liverworts is more elaborate than that in mosses.

(E) Both, Pinus and Marchantia are dioecious

How many of the above statements are correct? [NEET-2013]

(1) Two (2) Three (3) Four (4) One

22. Which one of the following pairs is wrongly matched? [AIPMT (Mains)-2012]

1) Ginkgo - Archegonia

2) Salvinia - Prothallus

3) Viroids - RNA

4) Mustard - Synergids

23. Gymnosperms are also called soft wood spermatophytes because they lack [AIPMT (Prelims)-2012]

1) Thick-walled tracheids 2) Xylem fibres

3) Cambium 4) Phloem fibres

24. Which one of the following is common to multicellular fungi, filamentous algae and protonema of mosses? [AIPMT (Prelims)-2012]

1) Multiplication by fragmentation

2) Diplontic life cycle

3) Members of kingdom Plantae

4) Mode of Nutrition

25. Cycas and Adiantum resemble each other in having: [AIPMT (Prelims)-2012]

1) Cambium 2) Vessels

3) Seeds 4) Motile Sperms

26. Which one of the following is a correct statement? [AIPMT (Prelims)-2012)

1) Antheridiophores and archegoniophores are present in pteridophytes

2) Origin of seed habit can be traced in pteridophytes

3) Pteridophyte gametophyte has a protonemal and leafy stage

4) In gymnosperms. female gametophyte is free-fiving

27. Read the following five statements (A-E) and answer as asked next to them

A) In Equisetum, the female gametophyte is retained on the parent sporophyte

B) In Ginkgo, male gametophyte is not independent

C) The sporophyte in Riccia is more developed than that in Polytrichum

D) Sexual reproduction in Volvox is isogamous

E) The spores of slime molds lack cell walls

How many of the above statements are correct? [AIPMT (Mains)-2012)

1) Two 2) Three 3) Four 4) One

28. Selaginella and Salvinia are considered to represent a significant step toward evolution of seed habit because [AIPMT (Mains)-2011]

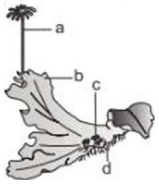
1) Megaspores possess endosperm and embryo surrounded by seed coat

2) Embryo develops in female gametophyte which is retained on parent sporophyte

3) Female gametophyte is free and gets dispersed like seeds

4) Female gametophyte lacks archegonia

29. Examine the figure given below and select the right option giving all the four parts (a, b. c, d) correctly Identified [AIPMT (Mains)-2011]



1) a – Seta,b- Sporophyte,c- Protonema, d- Rhizotds

2) a- Antheridiophore, b- Male thallus, c - Globule, d- Roots

3) a- Archegoniophore, b- Female thallus, c- Gemmacup, d- Rhizoids

4) a – Archegoniophore, b- Female thallus, c,- Bud,d- Foot

30. Consider the following four statements whether they are correct or wrong?

(A) The sporophyte in liverworts is more elaborate than that in mosses

(B) Salvinia is heterosporous

(C) The life-cycle in all seed-bearing plants is diplontic

(D) In Pinus, male and female cones are borne on different trees

The two wrong statements together are [AIPMT (Mains)-2011]

1) (B)and(C) 2) (A) and (B)

3) (A) and (C) 4) (A) and (D)

31. Archegoniophore is present in: [AIPMT (Prelims)-2011]

1) Funaria 2) Marchantia

3) Chara 4) Adiantum

32 The gametophyte is not an independent, free - living generation in: [AIPMT (Prelims)-2011]

1) Pinus 2) Potytrichum

3) Adiantum 4) Marchantia

33. Compared with the gametophytes of the bryophytes the gametophytes of vascular plants tend to be [AIPMT (Prelims)-2011]

1) Smaller and to have smaller sex organs

2) Smaller but to have larger sex organs

3) Larger but to have smaller sex organs

4) Larger and to have larger sex organs

34. Which one of the following is monoecious? [AIPMT (Mains)-2010]

1) Marchantia 2) Cycas

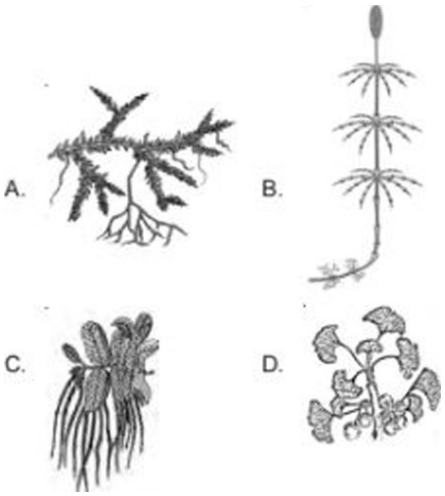
3) Pinus 4) Date palm

35 Male and female gametophytes are independent and free-living in [AIPMT (Prelims)-2010]

1) Sphagnum 2) Mustard

3) Castor 4) Pinus

36. Examine the figures A, B, C and D. In which one of the four options all the items A, B. C and D are correct? [AIPMT (Mains)-2010)



	A	B	C	D
(1)	Chara	Marchantia	Fucus	Pinus
(2)	Equisetum	Ginkgo	Selaginella	Lycopodlum
(3)	Selaginella	Equisetum	Salvinia	Ginkgo
(4)	Funaria	Adiantum	Salvinia	Riccia

37. Which one of the following plants is monoecious? [AIPMT (Prelims)-2009]

1) Pinus 2) Cycas

3) Papaya 4) Marchantia

38. Which one of the following has haplontic life cycle? [AIPMT (Prelims)-2009]

1) Polytrichum 2) Ustilago

3) Wheat 4) Funaria

39. Phylogenetic system of classification is based on. [AIPMT (Prelims)-2009]

1) Morphological features

2) Chemical constituents

3) Floral characters

4) Evolutionary relationships

40. Mannitol is the stored food in: [AIPMT (Prelims)-2009)

1) Porphyra 2) Fucus

3) Gracillaria 4) Chara

41. Which one of the following is considered important in the development of seed habit? [AIPMT (Prelims)-2009]

1) Heterospory

2) Haplontic life cycle

3) Free-living gametophyte

4) Dependent sporophyte

42. Select one of the following of important features distinguishing Gnetum from Cycas and Pinus and showing affinities with angiosperms [AIPMT (Prelims)-2008]

1) Embryo development and apical meristem

2) Absence of resin duct and leaf venation

3) Presence of vessel elements and absence of archegonia

4) Perianth and two integuments

43. Which one of the following is heterosporous? [AIPMT (Prelims)-2008]

1) Equisetum 2) Dryopteris

3) Salvinia 4) Adiantum

44. In which one of the following male and female gametophytes do not have free living independent existence? [AIPMT (Prelims)-2008J

1) Cedrus 2) Pteris

3) Funaria 4) Polytrichum

45 In the prothallus of vascular cryptogam, the antherozoids and eggs mature at different times. As a result: [AIPMT (Prelims-2007)]

1) Self-fertilization is prevented

2) There is no change in success rate of fertilization

3) There is high degree of sterility

4) One can conclude that the plant is apomictic

46. If you are asked to classify the various algae into distinct groups, which of the following characters you should choose? [AIPMT (Prelims)-2007]

1) Chemical composition of the cell wall

2) Types of pigments present in the cell

3) Nature of stored food materials in the cell

4) Structural organization of thallus

47. Flagellated male gametes are present in all the three of which one of the following sets? [AIPMT (Prelims)-2007]

1) Riccia, Dryopteris and Cycas

2) Anthoceros, Funaria and Spimgyra

3) Zygnema, Saprolegnia and Hydrilla

4) Fucus, Marsilea and Calotropis

48. In gymnosperms, the pollen chamber represents: [AIPMT (Prelims)-2007]

1) The microsporangium in which pollen grains develop

2) A cell in the pollen grain in which the sperms formed

3) A cavity in the ovule in which pollen grains are stored after pollination

4) An opening m the mega gametophyte through which the pollen tube approaches the egg

49. Spore dissemination in some liverworts is aided by: [AIPMT (Prelims)-2007]

1) Peristome teeth 2) Elaters

3) Indusium 4) Calyptra

50. Moss peat is used as a packing material for sending flowers and live plants to distant places because [AIPMT (Prelims)-2006]

1) It is easily available

2) It is hygroscopic

3) It reduces transpiration

4) It serves as a disinfectant

51. Conifers differ from grasses in the : [AIPMT (Prelims)-2006]

1) Production of seeds from ovules

2) Lack of xylem tracheitis

3) Absence of pollen tubes

4) Formation of endosperm before fertilization

52. In a moss, the sporophyte [AIPMT (Prelims)-2006]

1) Is partially parasitic on the gametophyte

2) Produces gametes that give rise to the gametophyte

3) Arises from a spore produced from the gametophyte

4) Manufactures food for itself, as well as for the gametophyte

53. Match items in column-1 with those in column-II

	Column-I	Column-II
a.	Peritrichous flagellation	(i) Ginkgo
b.	Living fossil	(ii) Macrocystes
c.	Rhizophore	(iii) Escherichia coli
d.	Smallest flowering plant	(iv) Selaginella
e.	Largest perennial alga	(v) Wolffia

Select the correct answer from the following:

(1) a(ii),b(i), c(iii), d(iv), e(v)

(2) a(v), b(iii), c(ii), d(v), E(i)

(3) a(i), b(ii), c(v), d(iii), e(ii)

(4) a(iii), b(i), c(iv), d(v), e(ii)

54. Top-shaped multiciliate male gametes and the mature seed which bears only one embryo with two cotyledons, are characteristic features of: (AIPMT (Prelims)-2005]

1) Polypetalous angiosperms

2) Gamopetalous angiosperms

3) Conifers

4) Cycads

55. A system of classification, in which a large number of traits are considered, is

1) Natural system

2) Phylogenetic system

3) Artificial system

4) Synthetic system

			LEVEL-3 KEY						
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
3	1	3	1	1	2	3	3	2	4
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
3	4	1	1	4	4	3	4	2	3
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
2	2	2	1	4	2	4	2	3	4
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
2	1	1	3	1	3	1	2	4	2
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
1	3	3	1	1	2	1	3	2	2
51	**52**	**53**	**54**	**55**					
4	1	4	4	1					

PLANT GROWTH & DEVELOPMENT

LEVEL-1

1. Specific areas in the higher plants which takes part in the formation of new cells are called

1) Permanent tissue 2) Quicent centre
3) Meristems 4) Subapical part

2. Developing embryo (in vitro) shows

1) Geometric growth
2) Arithmetic growth
3) Geometric and arithmetic growth
4) None of the above

3. Auxanometer is used to detect

1) Respiration 2) Transpiration
3) Plant movement 4) Growth

4. The cells in the root and shoot apex

1) Are rich is protoplasm
2) Have conspicuous nuclei
3) Have their cell wall which are primary in nature, thin and cellulosic with abundant plasmodesmatal connections
4) All of the above

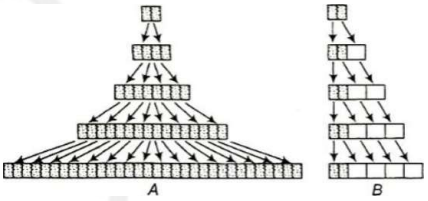
5. I. Lag phase → Log phase → Stationary phase
II. Geometric and Arithmetic phase of growth
III. Growth shown by all living organism in vivo
IV. Lt = L0 + rt
Match the above characters with sigmoid curve, arithmetic growth, embryo development and **choose the correct option accordingly**

Sigmoid curve	Arithmetic growth	Embryo development
1) II	I	III, IV
2) I, III	IV	II
3) I	II, III	IV
4) III, IV	I	II

6. I. Increased vacuolation
II. Cell enlargement
III. New cell wall deposition
Which of the above are the characteristics of phase of elongation? Choose the correct option accordingly

1) I and II 2) II and III
3) I and III 4) I, II and III

7. In the given diagram, what does A and B indicates?



Choose the correct option

1) A-Mitosis; B-Meiosis
2) A-Arithmetic growth; B-Geometric growth
3) A-Geometric growth; B-Arithmetic growth
4)A-Multiplicative phase; B-Replicative growth

8. Study the following statements

I. O_2 helps in releasing metabolic energy, which is essential for growth
II. Nutrients are required by plants for the synthesis of protoplasm
III. Change in temperature could be the detrimental for the survival of an organism
IV. Light and gravity don't affect the stages of growth

Choose the correct option

1) I, II, III and IV 2) I, II and III
3) I, III and IV 4) I, II and IV

9. I. On plotting the length of an organ against time, a linear curve is obtained

II. $Lt = L_0 + rt$

III. Following mitotic division, one daughter cell continues to divide while the other differentiate and mature

Above are the properties of

1) Arithmetic growth rate

2) Geometric growth rate

3) Both (1) and (2) 4) Elongation growth rate

10. Constantly dividing cells, both at the root apex and shoot apex represents

1) Elongation phase of the growth

2) Meristematic phase of the growth

3) Maturation phase of the growth

4) None of the above

11. Phase of maturation is characterised by

I. Cells attaining their maximal size

II. Proper wall thickening and protoplasmic modification

III. Rapid cell division

Select the correct option

1) I and II 2) III and I

3) II and III 4) I, II and III

12. Growth period of plant is generally divided into

1) Four phases 2) Three phases

3) Two phases 4) Five phases

13. I. Plasmatic growth II. Differentiation

III. Maturation IV. Senescence

Identify the correct sequence of the following events occurring in plants and choose the correct option accordingly

1) I → II → III → IV 2) I → II → IV → III

3) IV → III → II → I 4) IV → I → II → III

14. Rapid and dramatic increase in shoot length is called

1) Triple response growth

2) Bolting

3) scarification

4) Night break effect

15. Response of plants due to reversible turgor change in pulvinus is

1) Nyctinastic 2) Seismonastic

3) Heptonastic 4) Photonastic

16. Plant growth regulators are also described as

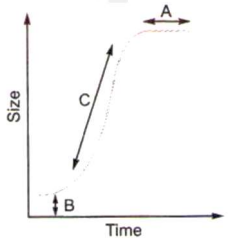
1) Plant growth substance

2) Plant hormones

3) Phytohormones

4) All of these

17. Given below is a graph drawn on the parameters of growth versus time. A, B and C respectively represent



1) Exponential phase, log phase and steady state phase

2) Steady state phase, lag phase and log phase

3) Slow growing phase, lag phase and steady state phase

4) Lag phase, steady state phase and log phase

18. Increase in the girth of plant (organ) takes place by

1) Vascular cambium

2) Cork cambium

3) Both (1) and (2)

4) Root and shoot apical meristem

19. The cells derived from cambium, root apical and shoot apical meristem differentiate and mature to perform specific functions. This act is called

1) Differentiation 2) Dedifferentiation
3) Redifferentiation 4) All of these

20. During differentiation, the cells undergo few to major structural changes in their

1) Cell wall 2) Protoplasm
3) Both (1) and (2) 4) Cytoplasm

21. The deteriorative processes in plants that naturally terminate their functional life, are collectively called

1) Wilting 2) Abscission
3) Plasmolysis 4) Senescence

22. Plants follow …A… pathways in response to environment or phases of life to form different kind of structures. This ability is called …B… Complete the given statement with the correct combination of options

1) A-same; B-elasticity
2) A-elasticity; B-same
3) A-different; B-plastically
4) A-same; B-plastically

23. Environment heterophylly is seen in

1) Cotton
2) Coriander
3) Larkspur
4) Buttercup

24. Difference between kinetin and zeatin is

1) Kinetin is active zeatin, is non-active
2) Zeatin is active kinetin, is non-active
3) Zeatin is synthetic, kinetin is natural
4) Zeatin is natural, kinetin is synthetic

25. Which one of the following acids is a derivative of carotenoids?

1) Indole-butyric acid
2) Indole-3 acetic acid
3) Gibberellic acid
4) Abscisic acid

26. I. Antagonist to GA

II. Promoted bud dormancy
III. Promoted stomatal closure
IV. Promoted abscission layer

Identify the hormone/s which promote/s all these events in plants and **choose the correct option**

1) Cytokinin 2) Auxin
3) Abscisic acid 4) C_2H_4

27. I. Cell elongation
II. Cell division
III. Cell differentiation

Among the above mentioned, what is/are the function(s) of auxin?

1) I and II 2) III and I
3) II and III 4) I, II and III

28. Natural cytokinins are synthesized in tissue that are

1) Senescent 2) Dividing rapidly
3) Storing food material
4) Differentiating

29. Which phytohormone has viral inhibitory property?

1) IAA 2) GA_3 3) ABA 4) 2,4-D

30. Richmond-Lang effect is concerned with

1) Delay in senescence
2) Breaking dormancy
3) Suppression of apical dominance
4) Cell elongation

31. Auxin in plant means for

1) Cell elongation 2) Fruit ripening

3) Cell division 4) Inhibition of root growth

32. Which of the following movements in plants is due to the increased concentration of auxin?

1) Movement of shoot towards the source of

2) Nyctinasty light

3) Movement of sunflower towards sun

4) All of the above

33. The hormone present in the liquid endosperm of coconut is

1) Cytokinin

2) Gibberellins

3) Ethylene

4) auxin

34. A phytohormone, which increases the production of starch hydrolyzing enzymes during the germination of maize seeds, is employed for the following

1) Increasing the vase-life period of flowers

2) Induction of seedless fruits in grapes

3) Acceleration of ripening of banana fruits

4) Eradication of dicot weeds

35. Which was discovered first?

1) GA_1 2) GA_2

3) GA_3 4) GA_4

36. Choose the correct statement

I. Cytokinin - Delay of leaf senescence

II. Auxin - Apical dominance

III. Ethylene - Seed germination

IV. Gibberellins - Immature falling of leaves

1) I and II

2) I and IV

3) II and III

4) II and IV

37. Identify the correct option for A and B

Compound	**Function**
2,4-D	A
B	Fruit ripening

A	B	A	B
1) Insecticide	Auxin	2) Insecticide	Cytokinin
3) Insecticide	GA	4) Weedicide	Ethylene

38. Ethephon

1) Hasten fruit ripening in tomatoes

2) Accelerate abscission

3) Promote female flower cucumbers

4) All of the above

39. The following statements are given about plant growth hormones:

I. Cytokinins suppress the synthesis of chlorophyll.

II. Auxins control apical dominance.

III. Gibberellins promote shoot elongation.

IV. Abscisic acid enabling seeds to withstand desiccation.

Which of the above statements are correct?

1) I and II

2) II and III

3) I and III 4) II, III and IV

40. Cell elongation in intermodal regions of the green plants takes place due to

1) Indole acetic acid

2) Cytokinins

3) Gibberellins 4) Ethylene

41. Which of the following pairs, is not correctly matched?

1) Abscisic acid - Stomatal closure

2) Gibberellic acid -Leaf fall

3) Cytokinin - Cell division

4) IAA - Cell wall elongation

42. The rosette habit of cabbage can be changed by application of

1) IAA 2) GA 3) ABA 4) Ethaphon

43. After a series of experiments, it was concluded that the …A… of coleoptile was the site of transmittable influence that caused the …B… of the entire coleoptile.

Complete the given statement with the correct combination of options given in the codes below

1) A-root site; B-bending

2) A-lateral side; B-bending

3) A-shoot side; B-bending

4) A-tip; B-bending

44. Which one is not an ethylene effect?

1) Swelling of axis

2) Apical hook formation in dicot seedlings

3) Horizontal growth of seedlings

4) Apical dominance

45. Identify two of the following phytohormones, which regulate the stomatal movements?

I.IAA

II. GA_3

III. Zeatin

IV. ABA

1) I and III 2) II and III

3) III and IV 4) II and IV

46. In some plants, sleep movement of leaves is due to

1) Excess of photosynthesis

2) Osmotic changes at base of leaf

3) Excess of respiration

4) Excess of transpiration

47. Apical dominance is caused by

1) Auxin 2) Cytokinin

3) Ethylene 4) Gibberellin

48. Substance related with phototropism in shoot, is

1) Ethanol 2) Cytokinins

3) Auxin 4) Gibberellins

49. On the basis of correlation, find the correct option from columns.

Column I	Column II	Column III
I. Foolish plant	(P) Volatile Hormone	(I) Induces Dormancy
II. Induces senescence	(q) GA	(ii)Ripens fruits
	(r) Zeatin	(iii) Usually Sterile plant

1) I-p-ii, II-r-i

2) I-r-iii, II-q-iii

3) I-q-iii, II-p-ii 4) I-q-i, II-r-ii

50. Geotropic response is perceived by

1) Mature roots

2) Elongation roots

3) Root cap

4) Root hairs

51. 6-furfuryl amino purine, 2-4 dichlorophenoxy acetic acid and indole-3 acetic acid are examples respectively for

1) Synthetic auxin kinetin and natural auxin

2) Gibberellins, natural auxin and kinetin

3) Natural auxin, kinetin and synthetic auxin

4) Kinetin, synthetic auxin and natural auxin

52. The ripening of fruits can be fastened by treatment with

1) Gibberellins

2) Cytokinins

3) Ethylene

4) Auxin

53. The Plant Growth Regulator (PGR), ethylene comes under the category of

1) Simple plant hormone
2) Complex plant hormone
3) Plant growth inhibitor hormone
4) Plant growth promoter hormone

54. Which of the following hormones does not naturally occur in plants?

1) 2,4-D 2) IAA 3) GA 4) ABA

55. Bolting may be induced by

1) Gibberellins 2) ABA
3) auxin 4) Cytokinin

56. Which hormone causes stunted growth in pea?

1) Gibberellic acid 2) Auxin
3) Cytokinin 4) Ethylene

57. Which plant growth regulator is responsible for triple response?

1) C_2H_4 2) IAA 3) IBA 4) ABA

58. Which of the following functions is/are notthe function/s of cytokinin?

I. New leaves formation
II. Chloroplast formation in leaves
III. Lateral shoot formation
IV. Adventitious shoot formation
V. Rooting on stem cuttings
Choose the correct option
1) Only I 2) II and III
3) Only IV 4) OnlyV

59. I. Indole-3-acetic acid

II. 2-4, dichlorophenoxy acetic acid
III. 6 Indole butyric acid
IV. Naphthalene acetic acid
Above are the examples of which PGR?
1) Auxin 2) Cytokinin
3) Ethylene 4) Gibberellin

60. Auxin originates at the tip of the stem and controls growth elsewhere. The movement of auxin is largely

1) Basipetal
2) Acropetal
3) Both (1) and (2) 4) centripetal

61. The stress hormone that helps plant to respond drought is

1) Auxins
2) Abscisic acid
3) Cytokinin 4) Ethylene

62. The chemical nature of gibberellins is

1) Acidic 2) Alkaline
3) Proteinaceous 4) Amines

63. I. Kinetin is a degradative substance from DNA

II. ABA is present in all plants including lower plants
III. Low ratio of cytokinin to auxin favours root formation only
IV. ABA is synthesised catabolically through glycolysis pathway
Choose the correct combination of options
1) I and II
2) II and III
3) I and III 4) III and IV

64. A hormone delaying senescence is

1) Auxin
2) Cytokinin
3) Ethylene 4) gibberellin

65. Choose the incorrect pair.

1) Auxins - To grow
2) Gibberellins - Gibberella fujikuroi
3) Cytokinins- Herring sperm DNA
4) Abscisic acid - Flowering hormone

66. Fruits can be left on the tree longer, so as to increase the market period. This is due to the function of

1) Delay senescence by auxin
2) Delay senescence by CH_2 - CH_2
3) Delay senescence by cytokinin
4) Delay senescence by GA

67. The most common auxin is

1) GA 2) ABA 3) Kinetin 4) IAA

68. Micropropagation is done by

1) Auxins 2) GA
3) Cytokinin 4) Both (1) and (2)

69. I. Auxin II. Cytokinin
III. GA IV. ABA
Which of the above mentioned PGA are acidic in nature?
Choose the correct option accordingly

1) I and II 2) I, III and IV
3) I, II and III 4) I, II, III and IV

70. Which of the following is an anti-gibberellin?

1) Auxin 2) ABA 3) Ethylene 4) Cytokinin

71. I. More female flowers in cucumber
II. a-amylase production is barley grain
III. Acceleration of fruit ripening in tomato
IV. Delayed in sprouting in potato tubers
From the given effects find, out the effects of ethylene and
Choose the correct option accordingly

1) I and II 2) I and III
3) II and IV 4) III and IV

72. 'Bakane' (foolish seedling) disease of rice seedlings, was caused by

1) Fungi 2) Protozoa
3) Bacteria 4) Virus

73. Florigen is produced in the region of

1) Leaves 2) Fruit 3) Root 4) Trunk

74. Which of the following movement in plants is not related to change in auxin level?

1) Nyctinastic leaf movement
2) Movement of root towards soil
3) Movement of sunflower, tracking the direction of sun
4) Movement of shoot towards light

75. IAA is derived from or which of the following is involved in the synthesis of a plant IAA and vasoconstrides cerotonin?

1) Tryptophan 2) Tyrosine
3) Phenylalanine 4) None of these

76. Which one of the following pairs is not correctly matched?

1) Adenine derivative-kinetin
2) Carotenoid derivative-ABA
3) Terpenes-IAA
4) Indole compounds-IBA

77. Cytokinin helps in delaying the leaf falling/senescences mainly by

1) Promoting nutrient mobilisation
2) Inhibiting cell division
3) Promoting cell elongation
4) Promoting cell differentiation

78. Most widely used compound as a source of ethylene is

1) Nepthol 2) Acetol
3) Ethephon 4) Ethepcon

79. Identify to which plant hormone, the given function belongs

I. Initiates flowering in pineapples
II. Induces flowering in mango
III. Root growth and root hair promotion

	I	II	III
1)	C_2H_4	C_2H_4	C_2H_4
2)	C_2H_4	IAA	GA
3)	C_2H_4	GA	IAA
4)	GA	IAA	IBA

80. I. Initiate rooting in stem cuttings
II. Promote flowering in pineapples
III. Controls xylem differentiation
Identify the functions of auxin and choose the correct option
1) I and II
2) II and III
3) III and I 4) I, II and III

81. The plant hormone produced by Rhizobium for nodulation is
1) IBA 2) NAA 3) 2,4-D 4) IAA

82. The hormone involved in metabolism of food material in cereal grains during germination is
1) Auxin 2) Cytokinin
3) Gibberellin 4) None of these

83. In plants, phototropism is the movement
1) Towards the light source
2) Away from the light source
3) Parallel to the light source
4) Lateral to the light source

84. Which of the following processes is concerned with Cholodny-Went theory?
1) Photomorphogenesis
2) Photoperiodism
3) Phototropism
4) photorespiration

85. An example of short-day plant is
1) Wheat 2) Maize
3) chrysanthemum 4) radish

86. Nicotiana sylvestris flowers only during long days while N.tobacum flowers only during short days. If raised in the laboratory under different photoperiods, they can be induced to flower at the same time and can be cross fertilized to produce self-fertile offspring.
What is the best reason for considering N. sylvestris and N. tobacum to be separate species?
1) They are physiologically distinct
2) They are morphologically distinct
3) They cannot interbreed in nature
4) They are reproductively distinct

87. SDP also called
1) Short night plant
2) Long night plant
3) Intermediate night plant
4) None of these

88. Photoperiodism was first studied by
1) Garner and Allard 2) Darwin
3) FW Went 4) Cousins

89. Canary grass experiment for phototropism was firstly conducted by
1) Went 2) Darwin 3) Cousins 4) Kurosawa

90. Importance of day length in flowering of plants was first shown in
1) Lemna 2) Tobacco 3) Cotton 4) Pentunia

91. A plant have 13 hours critical day light under which condition it will flower Duration of light Duration of dark

	Period	Period	Period	Period
1)	13	11	2) 11	13
3) 12		12	4) 10	14

92. Effect of photoperiod on growth and development of plants especially on flowering is called

1) Vernalisation 2) Photoperiodism

3) Both (1) and (2) 4) Phototaxis

93. The site of perception of light is

1) Root 2) Shoot 3) Leaves 4) Meristem

94. Vernalization is done at

1) Lower temperature 2) Low light intensity

3) Higher temperature 4) High light intensity

LEVEL-1 KEY

1	2	3	4	5	6	7	8	9	10
3	3	4	4	2	4	3	2	1	2
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	2	1	2	2	4	2	4	1	3
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
4	3	4	4	4	4	2	3	1	1
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
1	1	2	3	1	4	4	4	3	2
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
2	4	4	3	2	1	3	3	3	4
51	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
3	3	1	1	4	1	4	1	3	2
61	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**
1	3	2	4	4	4	4	2	2	1
71	**72**	**73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**
1	1	1	3	3	1	3	1	4	4
81	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**	**90**
3	1	3	3	4	2	1	2	2	2
91	**92**	**93**	**94**						
1	2	3	1						

LEVEL-2

1. The phenomenon of the inhibiting the growth of the lateral buds by growing apical bud is called

1) Dormancy 2) Apical dominance

3) Bolting4) Triple response

2. All are the functions of adenine derivative phytohormone. Except

1) Promotes nutrient mobilisation

2) Delays leaf senescence

3) Accelerates thinning of cotton, cherry and walnut

4) Promotes adventitious shoot formation

3. Choose the mismatched pair.

1) Rooting hormone – Gibberellins

2) Stress hormone – ABA

3) Antiageing hormone – Cytokinin

4) Ripening hormone – Ethylene

4. Which of the following is used to increase the market period of fruit and to kill dicot weeds respectively?

1) GA_3, 2, 4-D

2) BAP, C_2H_4

3) GA_3, BAP 4) C_2H_4,ABA

5. Pollen tube growth is measured in terms of

1) Surface area 2) Cell number

3) Fresh weight 4) Length

6. Elongation of root at constant rate is

1) Arithmetic growth: S-curve: $L_0 = L_t + rt$

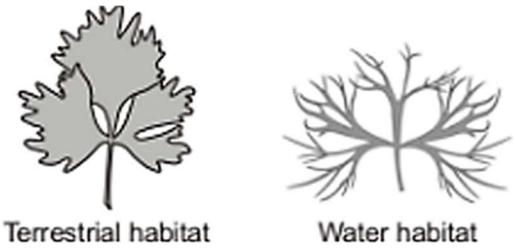
2) Arithmetic growth; Linear curve, $L_t = L_0 + rt$

3) Exponential growth; S-curve; $W_1 = W_0$ ert

4) Exponential growth; Linear curve;

$W_0=W_1$ ert

7. The given heterophylly is present in



1) Butter cup 2) Delphinium
3) Cotton 4) Coriander

8. In which of the following plants there is no correlation between exposure to light duration and induction of flowering response?

1) Long day plant: Wheat
2) Short day plant; Rice
3) Long night plant; Tomato
4) Day neutral plant: Maize

9. Find the correct option w.r.t. Vernalisation

1) Induction of flowering by only quantitative exposure to low temperature
2) Prevents precocious reproductive development late in the growing season and enables plant to reach maturity in sufficient time
3) Site of perception is mature leaf
4) Shown by annuals, biennials and perennials

10. Match the following

	Column-I (PGR)		Column-ll (Function)
a.	Cytokinins	(i)	Flowering in pineapple
b.	Auxins	(ii)	Lateral shoot growth
c.	Ethylene	(iii)	Flowering in mango
d.	ABA	(iv)	Seed development
		(v)	Promotes root growth

1) a(ii), b(i), c(iii), d(iv)
2) a(ii), b(iv), c(iii), d(v)
3) a(iii), b(v), c(i), d(iv)
4) a(i), b(iii), c(ii), d(v)

11. Which of the following can cause seed dormancy?

1) Ethylene 2) Gibberellins
3) Cytokinin 4) Abscisic acid

12. Find the odd one w.r.L short day plants (SDP).

1) Soyabean 2) Sugarcane
3) Tobacco 4) Radish

13. Which of the following plant growth regulator plays an important role in seed development, maturation and dormancy?

1) Ethylene 2) Abscisic acid
3) Auxins 4) Cytokinins

14. Which of the following phytohormones help to prevent fruit and leaf drop at early stages but promote the abscission of older mature leaves and fruits?

1) Auxins 2) ABA
3) Cytokinins 4) Gibberellins

15. Consider the following statements w.r.L gibberellins (GAs) and select right choice.

(a) More than 100 GAs are reported from fungi only
(b) All GAs are acidic
(c) Help in early seed production in conifers
(d) They also delay senescence

1) Only (d) is correct
2) (a), (b) & (d) are correct
3) (b), (c) & (d) are correct
4) (a) & (b) are correct

16. Cytokinins are synthesised in

1) Root apices
2) Developing shoot buds
3) Young fruits
4) More than one option is correct

17 Select the incorrect statement w.r.t. cells of meristematic zone during growth.

1) The cells are rich in protoplasm
2) Possess large conspicuous nucleus
3) Cell walls are secondary in nature
4) Cells have high karyoplasmic ratio

18. Which of the following is wrong statement w.r.t. ethylene?

1) Promotes abscission of leaves
2) Most widely used PGR in agriculture
3) Inhibits the respiration during ripening of the fruits
4) Initiates sprouting of potato tubers

19. During removal of shoot tips in tea plant, the most active hormone is

1) Cytokinins 2) Auxins
3) Ethylene 4) Gibberellins

20. Choose the mismatched pair.

1) Ethephon - Thinning of cherry
2) Auxins - Xylem differentiation
3) ABA - Mostly antagonist to GA3
4) Cytokinins – Bolting

21. Growth in plant organs is

1) Qualitative and extrinsic
2) Quantitative and intrinsic
3) Qualitative and intrinsic
4) Quantitative and extrinsic

22. The growth in plants differs from growth in animals in

1) Being localized and indefinite
2) Being indefinite
3) Having indefinite lifespan
4) Having definite lifespan

23. Find out the correct statement(s).

(a) Growth in plants »s internal/intrinsic and open ended

(b) Formation of cellular materials is called real or protoplasmic growth

(c) Plant growth is diffused only during the early embryonic stage

1) Only (a) &(b) 2) (b)only
3) Only (b) & (c) 4) (a),(b)&(c)

24. Find odd one w.r.t. differentiation

1) Loss of nucleus in sieve
2) Death of protoplasm in tracheary elements
3) Callus formation
4) Lignification in vessels

25. Which of the given is/are examples of differentiation?

1) Loss of nucleus and perforations in some sieve tube members
2) Lignin deposition in tracheids and vessels
3) Differential wall thickening in guard cells
4) More than one option is correct

26. Larkspur. Ranunculus and cotton plants are similar in the presence of

1) Developmental heterophylly
2) Plasticity
3) Environmental heterophylly
4) Homospory

27. If an etiolated stem could be first saturated with auxin by spraying and then exposed to a streak of light from one side, it will

1) Bend towards the light
2) Bend away from the light
3) Grow straight upwards
4) Be prevented from growing

28. Which is not a physiological effect of auxins?

1) Cell elongation
2) Development of parthenocarpic fruits
3) Prevention of abscission of leaves and fruits
4) Reversal of genetic dwarfism

29. The direction of the transport of auxins is

1) Polar in basipetal
2) Polar in acropetal
3) Through xylem
4) Through phloem

30. Pruning of tea plants is done to discard the effects of

1) GA_3 2) Auxin
3) Cytokinin 4) ABA

31. Which of the following hormone is weak organic acid having unsaturated ring structures and derived from amino acid?

1) Cytokinin 2) Auxin
3) Gibberellins 4) Ethylene

32. Specific property attributed to GA is

1) Shortening of genetically tall plants
2) Elongation of genetically dwarf plants
3) Rooting of stem cuttings
4) Promotion of leaf and fruit fall

33. The plant hormone which is basic in nature?

1) Auxin 2) Gibberellins
3) Cytokinin 4) Abscisic acid

34 Delay of senescence or Richmond Lang effect is a physiological effect of

1) IAA 2) CK
3) GA 4) C_2H_4

35. Shelf life of vegetables and cut flowers can be increased by commercial application of

1) Cytokinin 2) AMO1618
3) Cyclocel 4) Phosphon-D

36. The phytohormone combination which is the key regulator of cell differentiation and morphogenesis is

1) Cytokinin & IAA
2) IAA & ABA
3) IAA & GA_3
4) Cytokinin & Gibberellin

37. Cytokinins are said to be antiageing hormone because they delay the senescence by

1) Controlling mobilisation of resources
2) Controlling protein synthesis
3) Decreased morphogenesis and high respiration
4) Both 1) & 2)

38. Number of female flowers can be increased by application of

1) IAA 2) C_2H_4
3) CK 4) All of these

39. Triple response is shown by hormone

1) Ethylene 2) CK
3) 2.4-D 4) GA_3

40. CH2 = CH2 is mainly responsible for

1) Formation of internode
2) Formation of nodes
3) Ripening of fruits
4) Formation of internodes

41. The hormone which can replace long days and low temperature requirement for flowering in some plants is

1) Gibberellin 2) Cytokinin
3) Vernalin 4) Ethylene

42. Gibberellin mediate amylase formation during germination of cereal grains is inhibited by

1) Abscisic acid 2) Ethylene
3) Gibberellins 4) Cytokinins

43. Select an incorrect match

1) Tryptophan - Auxin
2) Methionine - Ethylene
3) tRNA - Cytokinin
4) Violaxanthin - GA_3

44. Which is not true for abscisic acid?

1) Acts as antitranspirant
2) Synthesized in chloroplast from carotenoids
3) Increases stress tolerance in plants
4) Induces epinasty of leaves and flowers

45. Which hormone stimulates the closure of stomata in the epidermis and increases the tolerance of plants to various kinds of stresses?

1) ABA 2) Cytokinin
3) GA3 4) Auxin

46. Match the following

	Column I	Column II
a.	Auxin	(i) Root hair formation
b.	Cytokinin	(ii) Seed development
c.	Ethylene	(iii) Xylem differentiation
d.	ABA	(iv) Nutrient mobilisation

1) a(iv), b(ii), c(iii), d(i)
2) a(ii). b(iii), c(i), d(iv)
3) a(i), b(iii), c(ii), d(iv)
4) a(iii), b(iv), c(i), d(ii)

47. Condition of suspended growth due to external environmental conditions is called

1) Dormancy 2) Rest
3) Quiescence 4) All of these

48 Seed dormancy in tomato seeds is due to

1) Impermeable seed coat
2) Immature embryo
3) Presence of ferulic acid in pulp
4) Abscisic acid in pulp

49. Which of the given event does not happen during seed germination?

1) Emergence of radicle
2) Increase in rate of respiration
3) Hydrolysis of stored polysaccharides and proteins
4) Photosynthesis by cotyledons

50. For flowering, critical dark period should always be exceeded in

1) Long day plants 2) Short day plants
3) Day neutral plants 4) All type of plants

LEVEL-2 KEY

1	2	3	4	5	6	7	8	9	10
2	3	1	1	4	2	1	4	2	1
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
4	4	2	1	3	4	3	3	1	4
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
2	1	4	3	4	2	1	4	1	2
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
2	2	3	2	2	1	1	4	1	3
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
1	1	4	4	1	4	3	3	4	2

LEVEL-3 (PREVIOUS YEAR QUESTIONS)

1. Removal of shoot tips is a very useful technique to boost the production of tea-leaves. This is because : [NEET-2019 (Odisha)]

1) Gibberellins delay senescence of leaves.

2) Gibberellins prevent bolting and are inactivated

3) Auxins prevent leaf drop at early stages.

4) Effect of auxins is removed and growth of lateral buds is enhanced.

2. What is the site of perception of photoperiod necessary for induction of flowering in plants?

1) Lateral buds 2) Pulvinus **[NEET-2019]**

3) Shoot apex 4) Leaves

3. It takes very long time for pineapple plants to produce flowers. Which combination of hormones can be applied to artificially induce flowering in pineapple plants throughout the year to increase yield? [NEET-2019]

1) Auxin and Ethylene

2) Gibberellin and Cytokinin

3) Gibberellin and Abscisic acid

4) Cytokinin and Abscisic acid

4. Fruit and leaf drop at early stages can be prevented by the application of [NEET-2017]

1) Cytokinins 2) Ethylene

3) Auxins 4) Gibberellic acid

5. You are given a tissue with its potential for differentiation in an artificial culture. Which of the following pairs of hormones would you add to the medium to secure shoots as well as roots?

1) IAA and gibberellin **[NEET (Phase-2)-2016]**

2) Auxin and cytokinin

3) Auxin and abscisic acid

4) Gibberellin and abscisic add

6. Phytochrome is a [NEET (Phase-2)-2016]

1) Flavoprotein 2) Glycoprotein

3) Lipoprotein 4) Chromoprotein

7. The avena curvature is used for bioassay of

1) Ethylene 2) ABA **[NEET-2016]**

3) GA3 4) IAA

8. Auxin can be bioassayed by [Re-AIPMT-2015]

1) Lettuce hypocotyl elongation

2) Avena coleoptile curvature

3) Hydroponics

4) Potometer

9. Typical growth curve in plants is

1) Parabolic

2) Sigmoid **[AIPMT-2015]**

3) Linear

4) Stair-steps shaped

10. What causes a green plant exposed to the light on only one side, to bend toward the source of light as it grows" [AIPMT-2015]

1) Auxin accumulates on the shaded side, stimulating greater cell elongation there

2) Green plants need light to perform photosynthesis

3) Green plants seek light because they are phototropic

4) Light stimulates plant cells on the lighted side to grow faster

11. A few normal seedings of tomato were kept in a dark room. After a few days they were found to have become white-coloured like albinos. Which of the following terms will you use to describe them? [AIPMT-2014]

1) Mutated

2) Embolised

3) Etiolated 4) Defoliated

12. Which one of the following growth regulators is known as stress hormone? [AIPMT-2014]

1) Abscisic acid 2) Ethylene
3) GA_3 4) Indole acetic acid

13. Dr.F. Went noted that if coleoptile tips were removed and placed on agar for one hour, the agar would produce a bending when placed on one side of freshly - cut coleoptile stumps. Of what significance is this experiment? [AIPMT-2014]

1) It made possible the isolation and exact identification of auxin
2) It is the basis for quantitative determination of small amounts of growth-promoting substances
3) It supports the hypothesis that IAA is auxin
4) It demonstrated polar movement of auxins

14. During seed germination its stored food is mobilized by [NEET-2013]

1) Cytokinin 2) ABA
3) Gibberellin 4) Ethylene

15. Through their effect on plant growth regulators, what do the temperature and light control in the plants? [AIPMT (Mains)-2012]

1) Apical dominance 2) Flowering
3) Closure of stomata 4) Fruit elongation

16. Which one of the following generally acts as an antagonist to gibberellins? [AIPMT (Mains)-2012]

1) Zeatin 2) Ethylene
3) ABA 4) IAA

17. Vernalisation stimulates flowering in [AIPMT (Mains)-2012]

1) Zamikand 2) Turmeric
3) Carrot 4) Ginger

18. Photoperiodism was first characterised in [AIPMT (Prelims)-2010]

1) Cotton 2) Tobacco
3) Potato 4) Tomato

19. Phototropic curvature is the result of uneven distribution of [AIPMT (Prelims)-2010]

1) Auxin 2) Gibberellin
3) Phytochrome 4) Cytokinins

20. Coiling of garden pea tendrils around any support is an example of

1) Thermotaxis **[AIPMT (Prelims)-2010]**
2) Thigmotaxis
3) Thigmonasty
4) Thigmotropism

21. One of the commonly used plant growth hormone is tea plantations is

1) Ethylene **[AIPMT (Mains)-2010]**
2) Abscisic acid
3) Zeatin
4) Indole-3-acetic acid

22. Root development is promoted by [AIPMT (Mains)-2010]

1) Abscisic acid 2) Auxin
3) Gibberellin 4) Ethylene

23. One of the synthetic auxin is [AIPMT (Prelims)-2009]

1) IAA 2) GA
3) IBA 4) NAA

24. Which one of the following acids is a derivative of carotenoids?

1) Indole-3-aceticacid **[AIPMT (Prelims)-2009]**
2) Gibberellic acid
3) Abscisic acid
4) Indole butyric acid

25. Senescence as an active developmental cellular process in the growth and functioning of a flowering plant, is indicated in
1) Floral parts **[AIPMT (Prelims)-2008]**
2) Vessels and tracheid differentiation
3) Leaf abscission
4) Annual plants

26. Importance of day length in flowenng of plants was first shown in [AIPMT (Prelims)-2008]
1) Petunia 2) Lemna
3) Tobacco 4) Cotton

27 "Foolish Seedling" disease of rice led to the discovery of [AIPMT (Prelims)-2007]
1) IAA 2) GA 3) ABA 4) 2, 4 – D

28. Opening of floral buds into flowers, is type of: [AIPMT (Prelims)-2007]
1) Autonomic movement of growth
2) Autonomic movement of locomotion
3) Autonomic movement of variation
4) Paratonic movement of growth

29. Which one of the following pairs, is not correctly matched? [AIPMT (Prelims)-2007]
1) IAA - Cell wall elongation
2) Abscisic acid - Stomatal closure
3) Gibberellic acid - Leaf fall
4) Cytokinin - Cell division

30. The wavelength of light absorbed by Pr form of phytochrome is [AIPMT (Prelims)-2007]
1) 660 nm 2) 720 nm
3) 620 nm 4) 640 nm

31. How does pruning help in making the hedge dense? [AIPMT (Prelims)-2006]
1) It induces the differentiation of new shoots from the rootstock
2) It frees axillary buds from apical dominance
3) The apical shoot grows faster after pruning
4) It releases wound hormones

32. Treatment of seed at low temperature under moist conditions to break its dormancy is called : [AIPMT (Prelims)-2006J
1) Scarification 2) Vernalization
3) Chelation 4) Stratification

33. An enzyme that can stimulate germination of barley seeds is [AIPMT (Prelims)-2006]
1) a-amylase 2) Lipase
3) Protease 4) Invertase

34. Farmers in a particular region were concerned that pre-mature yellowing of leaves of a pulse crop might cause decrease in the yield. Which treatment could be most beneficial to obtain maximum seed yield?[AIPMT (Prelims)-2006]
1) Application of iron and magnesium to promote synthesis of chlorophyll
2) Frequent irrigation of the crop
3) Treatment of the plants with cytokinins along with a small dose of nitrogenous fertilizer
4) Removal of all yellow leaves and spraying the remaining green leaves with 2, 4, 5-trichkchlorophenoxy acetic acid

35. The ability of the venus flytrap to capture insects is due to : [AIPMT (Prelims)-2005]
1) Chemical stimulation by the prey
2) A passive process requiring no special ability on the part of the plant
3) Specialized "muscle-like" cells
4) Rapid turgor pressure changes

36. The pineapple which under natural conditions is difficult to blossom has been made to produce fruits throughout the year by application of

1) IAA, IBA 2) NAA, 2, 4-D
3) Phenyl acetic acid 4) Cytokinin

37. If the growing plant is decapitated, then
1) Its growth stops
2) Leaves become yellow and fall down
3) Axillary buds are inactivated
4) Axillary buds are activated

38. 2, 4-D is an effective
1) Rodenticide 2) Wormicide
3) Fungicide 4) Weedcide

39. If the apical bud has been removed then we observe
1) More lateral branches
2) More adventitious buds
3) Plant growth stops
4) Flowering stops

40. Which of the following prevents the fall of fruits?
1) GA_3 2) NAA 3) Ethylene 4) Zeatin

41. The maximum growth rate occurs in
1) Stationary phase 2) Senescent phase
3) Lag phase 4) Exponential phase

42. Gibberellic acid induces flower
1) In short day plants under long day conditions
2) In day-neutral plants under dark conditions
3) In some gymnospermic plants only
4) In long day plants under short day conditions

43. Which breaks dormancy of potato tuber?
1) Gibberellin 2) IAA
3) ABA 4) Zeatin

44. Cell elongation in internodal regions of the green plants takes place due to
1) Indole acetic acid 2) Cytokinins
3) Gibberellins 4) Ethylene

45 Natural cytokinins are synthesized in tissues that are
1) Senescent 2) Dividing rapidly
3) Storing food material 4) Differentiating

46 Differentiation of shoot is controlled by
1) High auxin : cytokinin ratio
2) High cytokinin : auxin ratio
3) High gibberellin : auxin ratio
4) High gibberellin : cytokinin ratio

47. Coconut milk factor is
1) Auxin 2) A Gibberellin
3) Abscisic acid 4) Cytokinin

48. Which hormone is responsible for fruit ripening?
1) Ethylene 2) Auxin
3) Ethyl chloride 4) Cytokinin

49 ABA is involved in
1) Shoot elongation
2) Increased eel division
3) Dormancy of seeds 4) Root elongation

50. Hormone responsible for senescence
1) ABA 2) Auxin 3) GA 4) Cytokinin

KEY

1	2	3	4	5	6	7	8	9	10
4	4	1	3	2	4	4	2	2	1
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
3	1	2	3	2	3	3	2	1	4
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
3	4	4	3	3	3	2	1	3	1
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
2	4	1	3	4	2	4	4	1	2
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
4	4	1	3	2	2	4	1	3	1

DIGESTION & ABSORPTION

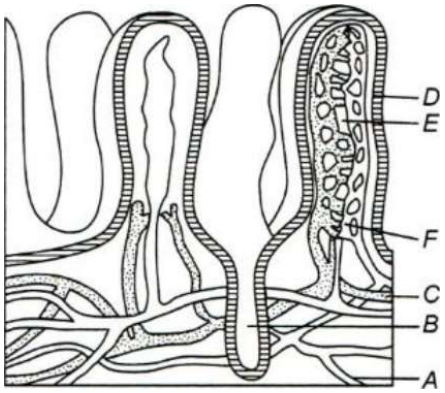
LEVEL-1

1. The layer of cells that secretes enamel of tooth is

1) Dentoblast 2) Ameloblast

3) Osteoblast 4) Odontoblast

2. Label the given diagram of transverse section of mucosa of small intestine showing small finger like projections. Choose the correct option accordingly



1) A-Vein, B-Crypt, C-Artery, D-Villi, E-Lacteal, F-Capillaries

2) A-Artery, B-Crypt, C-Vein, D-Villi, E-Capillaries, F-Lacteal

3) A-Vein, B-Artery, C-Crypt, D-Villi, E-Capillaries, F-Lacteal

4) A-Villi, B-Lacteal, C-Capillaries, D-Artery, E-Crypt, F-Vein

3. Kupffer's cells are

1) Phagocytic 2) Non-phagocytic

3) Myosin 4) Fibrin

4. Which is a symbiont inside human intestine?

1) Streptococcus pneumoniae

2) Neisseria meningitis

3) E. coli

4) Treponema pallidum

5. Duodenum has characteristic Brunner's gland, which secrete two hormones called

1) Kinase, oestrogen

2) Secretin, cholecystokinin

3) Prolactin, parathormone

4) Oestradiol, progesterone

6. Sphincter of oddi found in human being guards

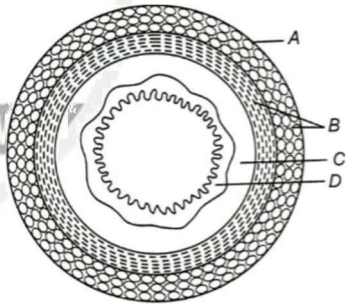
1) Opening of ampula into duodenum

2) Opening of hepatic ducts before joining the cystic duct

3) Opening of stomach into duodenum

4) Opening of cystic duct into pancreatic duct

7. Given below the diagram of the transverse section of alimentary canal. Label it correctly and choose the correct option accordingly



1) A-Muscularis; B-Serosa; C-Submucosa; D-Mucosa

2) A-Muscularis; B-Serosa; C-Mucosa; D-Submucosa

3) A-Serosa; B-Muscularis; C-Mucosa; D-Submucosa

4) A-Serosa; B-Muscularis; C-Submucosa; D-Mucosa

8. During intake of food, what prevents the entry of food into the glottis (opening of wind pipe)?

1) Glottis itself prevents into the entry of food glottis

2) Food entry is prevented by air present in wind pipe

3) Food entry into glottis is prevented by annular rings of pharynx

4) Food entry is prevented by epiglottis into the glottis

9. Aggregates of lymphoid tissue present in the distal portion of the small intestine are known as

1) Villi 2) Peyer's patches

3) Rugae 4) Choroid plexux

10. Which one serves as a passage for both food and air?

1) Larynx 2) Pharynx 3) Gullet 4) Glottis

11. The lacteals are found in

1) Salivary glands 2) Villi

3) Spleen 4) Mammary glands

12. Glisson's capsules are found, in which organ of mammals?

1) Stomach 2) Kidney

3) Testis 4) Liver

13. In which layer of the wall of alimentary canal, secretory glands are present?

1) Serosa 2) Mucosa

3) Muscularis 4) Submucosa

14. The islets of Langerhans are found in

1) Pancreas 2) Stomach

3) Liver 4) Alimentary canal

15. What is the composition of bile?

1) Bile pigments and bile salts

2) Bile pigments and cholesterol

3) Cholesterol and phospholipids

4) All of the above

16. Which of the following enzyme is not a component of human saliva?

1) a amylase 2) Lysozyme

3) Lipase 4) None of the above

17. The mucosal layer in the stomach form irregular folds known as

1) Villi 2) Lumen

3) Rugae 4) Crypts of Lieberkuhn

18. Characteristic of mammalian liver is

1) Kupffer's cells and leucocytes

2) Leucocytes and canaliculae

3) Glisson's capsules and Kupffer's cells

4) Glisson's capsule and leucocytes

19. Which is the correct chronological order for food processing in human beings?

1) Ingestion of food → Digestion → Absorption → Assimilation → Egestion (Undigested)

2) Ingestion → Assimilation → Digestion → Absorption → Egestion

3) Ingestion → Digestion → Absorption → Egestion → Assimilation

4) Digestion → Ingestion → Assimilation → Absorption → Egestion

20. The sphincter of Oddi found in man, guards the

1) Pancreatic duct 2) Hepatopancreatic duct

3) Bile duct 4) Cystic duct

21. Common bile duct is formed by the fusion of

1) Pancreatic duct and cystic duct

2) Pancreatic duct and hepatic duct

3) Pancreatic duct, hepatic duct and cystic

4) Hepatic duct and cystic duct duct

22. Pylorus is present between

1) Small and large intestine

2) Pancreas and small intestine

3) Oesophagus and stomach

4) Stomach and duodenum

23. How many salivary glands are present in human being?

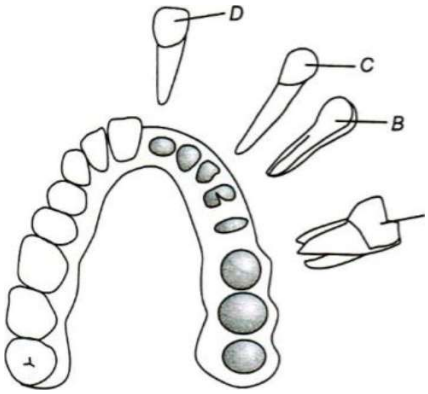
1) 6 2) 10 3) 8 4) 12

24. Kupffer's cells are present in

1) Liver 2) Small intestine

3) Pancreas 4) Thyroid gland

25. The given schematic diagram diepicts heterodont teeth and its thecodont arrangement. Find the correct labelling for A-D from the options given below



1) A-Incisor, B-Canine, C-Premolar, D-Molar

2) A-Molar, B-Premolar, C-Canine, D-Incisor

3) A-Incisors, B-Premolar, C-Canine, D-Molar

4) A-Molar, B-Premolar, C-Incisor, D-Canine

26. Which is the largest gland of human body?

1) Gastric gland 2) Pancreas

3) Liver 4) Salivary gland

27. Pepsin is inactivated at Ph

1) Below 3 2) Below 2

3) Above 5 4) Above 3

28. Which part of our body secretes the hormone secretin?

1) Ileum 2) Stomach

3) Duodenum 4) Oesophagus

29. Substrate for the enzyme amylase is

1) Nucleic acids 2) Protein

3) Starch 4) Fat

30. What will happen if the secretion of parietal cells of gastric glands is blocked with an inhibitor?

1) Gastric juice will be deficient in chymosin

2) Gastric juice will be deficient in pepsinogen

3) In the absence of HCl secretion, inactive

4) Enterokinase will not be released from the pepsinogen is not converted into theduodenal mucosa and so trypsinogen is not active enzyme pepsin converted to trypsin

31. Which of the following secretions gets mixed with the food (hydrolyse4) in the small intestine?

1) Bile, pancreatic juices and intestinal juices

2) Pancreatic juices, intestinal juices and gastric juices

3) Gastric juices, intestinal juices and biles

4) Bile, gastric juices and salivary uices

32. If pancreas is removed, the compound, which remains undigested is

1) Carbohydrates 2) Fats

3) Proteins 4) All of these

33. Which of the following match is correct?

1) Rennin - Protein

2) Trypsin - Starch

3) Invertase - Sucrose

4) Amylase – Lactose

34. Bile is composed of bile salts and bile pigments which are

1) Sodium glycocholate taurocholate and bilirubin, biliverdin, respectively

2) Bilirubin, biliverdin and sodium glycocholate taurocholate, respectively

3) Sodium glycocholate, taurocholate and bilirubin, respectively

4) Sodium glycocholate, taurocholate and biliverdin, respectively

35. In human beings, digestion of proteins, fats and carbohydrates starts from which of the following parts of the alimentary canal?

1) Stomach, intestine and mouth,
2) Only from stomach respectively
3) Intestine, stomach and mouth,
4) Only from intestine respectively

36. Part of bile juice useful in digestion is

1) Bile salt 2) Bile pigment
3) Bile matrix 4) All of these

37. Which enzymes are responsible to convert the end product of partially hydrolysed food into simple absorbable forms?

1) Enzymes of succus entericus
2) Proteolytic enzyme of pancreatic juice
3) Enzyme of gastric juice
4) All of the above

38. Success entericus is secreted by

1) Crypts of Leiberkuhn
2) Brunner's glands
3) Both (1) and (2)
4) None of these

39. Secretin and cholecystokinin are secreted by

1) Brunner's gland found in duodenum
2) Paneth cells present in duodenum
3) Goblet cells present through out the epithelium of the stomach
4) Oxyntic cells present on the side walls of the gastric glands

40. What is the major site for the conversion of proteins into free amino acids?

1) Spleen 2) Liver
3) Intestine 4) Kidney

41. Enzyme present in saliva is

1) Maltase 2) Ptyalin
3) Sucrase 4) Invertase

42. Complete the equation.

$$\text{Nucleic acids} \xrightarrow{\text{Nucleases}} \text{Nucleotides} \rightarrow .....$$

1) Monoglycerides 2) Diglycerides
3) Disaccharides 4) Nucleosides

43. Hydrochloic acid (HC1) is secreted by which of the following cells of stomach?

1) Chief cells
2) Parietal cells (oxyntic cells)
3) Peptic cells
4) Goblet cells

44. Maltose gives rise to two molecules of

1) Fructose 2) Lactose
3) Glucose 4) Sucrose

45. The gastric juice contains

1) Trypsin, pepsin, lipase
2) Pepsin, lipase, rennin
3) Pepsin, amylase, trypsin
4) Trypsin, pepsin, rennin

46. A young infant may be feeding entirely on mother's milk, which is white in colour but the stools, which the infant passes out is quite yellowish. This yellow colour is due to

1) Intestinal juice
2) Bile pigments passed through bile juice
3) Undigested milk protein casein
4) Pancreatic juice poured into duodenum

47. Starch is converted to maltose by the action of

1) Invertase 2) Amylase
3) Sucrose 4) Maltase

48. Which enzyme is responsible for the digestion of milk in infants?

1) Pepsin 2) Trypsin

3) Rennin
4) Various proteolytic enzyme

49. The Digestive enzyme that is not found in human pancreatic juice is

1) Nucleotidase 2) Nuclease
3) Trypsin 4) Lipase

50. Bile secretion is proportional to the concentration of

1) Protein 2) Fat
3) Carbohydrate 4) None of these

51. The contraction of gall bladder is due to

1) Gastrin 2) Cholecystokinin
3) Secretin 4) Kinase

52. Which one of the following pairs of food components in humans reaches the stomach totally undigested?

1) Protein and starch 2) Starch and fat
3) Fat and cellulose 4) Starch and cellulose

53. Which of the following processes will be affected by the absence of enterokinase?

1) Lipid → Fatty acid + Glycerol
2) Dipeptides → Amino acid
3) Proteases → Dipeptide
4) Amylase→ Maltose

54. The digestion of starch by amylase is completed in the

1) Mouth 2) Oesophagus
3) Stomach 4) Duodenum

55. The form, in which the synthesised fats are liberated from the intestinal wall into the lymph present in the lymphatic capillaries is

1) Micelles 2) Chylomicrons
3) Fatty acids 4)Both (1) and (2)

56. Major site of absorption of nutrients in human beings is

1) Stomach 2) Small intestine
3) Large intestine 4) Both (1) and (2)

57. Which one of the following statements is true regarding digestion and absorption of food in humans?

1) Oxyntic cells in our stomach secrete the Fructose and amino acids are absorbed proenzyme pepsinogen
2) through intestinal mucosa with the help of carrier ions like Na+
3) Chylomicrons are small lipoprotein
4) About 60% of starch is hydrolysed by salivary particles that are transported from amylase in our mouth intestine into blood capillaries

58. The main function of lacteals in the human small intestine is the absorption of

1) Glucose and vitamins
2) Amino acids and glucose
3) Water and vitamins
4) Fatty acids and glycerol

59. Brown colour of the stool is due to the presence of stercobilinogen and stercobilin, which are the derivatives of

1) Bilirubin 2) Biliverdin
3) Bile salt 4) Bile pigment

60. What is the main site of amino acids absorption in human's small intestine?

1) Duodenum 2) Jejunum
3) Ileum 4) Both (1) and (2)

61. Which form of fats is absorbed into the intestinal cells?

1) Micelles 2) Chylomicrons
3) Fatty acids 4) Both (1) and (2)

62. Which one of the following sugar is most rapidly absorbed in the human gut?
1) Glucose 2) Fructose
3) Galactose 4) Sucrose

63. Absorption of fat occurs through the process of
1) Active transport 2) Passive transport
3) Osmosis 4) Simple diffusion

64. Which of the following is absorbed from undigested food in the large intestine?
1) Water and vitamins
2) Water and product of bacterial digestion
3) Water and salt
4) Water and alcohols

65. Maximum absorption of water occurs in
1) Colon 2) Rectum
3) Large intestine 4) Small intestine

66. Scurvy is caused due to deficiency of vitamin
1) B 2) A 3) E 4) C

67. The inflammation of intestinal tract is due to the infection of which microorganism?
1) Bacteria 2) Virus
3) Fungus 4) Both (1) and (2)

68. Which combination is mismatched?
1) Vitamin- D-Rickets 2) Thiamine- Beri-beri
3) Vitamin-K-Sterility 4) Niacin-Pellagra

69. Which of the following metals is present in vitamin-B12?
1) Cobalt 2) Copper 3) Zinc 4) Magnesium

70. The vitamin, synthesized by bacteria is
1) B 2) D 3) K 4) E

71. Thiamine (Bx) deficiency results in
1) Wernicke's syndrome
2) Korsakoff's syndrome
3) Osteonecrosis
4) Tunnel vision

72. Pellagra is caused due to deficiency of
1) Niacin 2) Pantothenic acid
3) Tocopherol 4) Cyanocobalamin

73. Inadequate protein intake leads to kwashiorkor. The subsequent oedema is most closely related to inadequate synthesis of which protein?
1) Gamma globulin 2) Glucagon
3) Insulin 4) Albumin

74. The malnutrition disease in man is
1) Cri-du-chat syndrome
2) Klinefelter's syndrome
3) Potbelly syndrome
4) Edward's syndrome

75. The accumulation of faeces in the rectum and distension of the rectal wall initiates the feeling of defecation due to
1) Defecation reflex
2) Deamination
3) Irregular movement of bowl
4) None of the above

LEVEL-1 KEY									
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
2	1	1	3	2	1	4	4	2	2
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
2	4	2	1	4	4	3	3	1	2
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
4	4	1	1	2	3	3	3	3	3
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
1	4	3	1	1	1	1	1	1	3
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
2	4	2	3	2	2	2	3	1	2
51	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
2	3	3	4	4	2	3	4	1	4
61	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**
1	3	4	2	1	4	4	3	1	3
71	**72**	**73**	**74**	**75**					
1	1	4	3	1					

LEVEL-2

1. Choose the incorrect option w.r.t the cells and their secretion

	Cells	Secretion
(1)	Parietal cells	Castle's intrinsic factor
(2)	Hepatic cells	Lipase
(3)	Chief cell	Pepsinogen
(4)	Oxyntic cell	HO

2. All of the folowing components are present in the secretion of parotid and submaxillary glands, except

(1) Lysozyme (2) Thiocyanate ion

(3) Maltase (4) Ptyalin

3. In acute constipation the faeces are retained within rectum as bowel movements occur irregularly. purgatives containing (A) are generally used they (B) fluidity and volume intestinal contents by drawing water from blood into intestinal lumen by (C)

	A	B	C
1)	Magnesium salt	increase	endosmosis
2)	Sodium salt	decrease	exosmosis
3)	Magnesium salt	increase	exosmosis
4)	Potassium salt	decrease	endosmosis

4. Consider the following statements A & B

A - The enzyme acts on N' terminal of polypeptide chain

B - The enzyme acts on 'C' terminal of a polypeptide chain

Choose the correct option w.r.t. the digestive juices which contain these enzymes

1) A - Succus entericus B - Pancreatic juice

2) A - Intestinal juice B - Bile juice in duodenum

3) A - Pancreatic juice B - Intestinal juice

4) A - Intestinal juice B - Gastric juice

5. In case of humans, all are the factors which stimulate saliva secretion, except

1) Presence of food in oral cavity
2) Sight stimulus and smell of food
3) Parasympathetic stimulation
4) Vagal stimulation

6. Read the following statements

(A)_____is made up of a thin mesothelium with some connective tissues.

(B) _____are the structural and functional units of liver

Choose the option which correctly fills up the given blanks

1) A - Submucosa B – Hepatocyte
2) A - Mucosa B - Hepatic lobules
3) A - Submucosa B - Glisson's capsule
4) A-Serosa B - Hepatic lobules

7. The inflammation of intestinal tract is the most common adment due to

1) Bacterial infection
2) Viral infection
3) Intestinal parasites (worm)
4) All of these

8. Nyctalopia, xeropthalmia and keratinization of epithelia are due to

1) Deficiency of proteins
2) Deficiency of retinol
3) Deficiency of biotin
4) Deficiency of tocopherol

9. Mark the odd one w.r.t. the function of liver

1) Storage of fat and glycogen
2) Urea synthesis
3) Erythropoiesis in adult and embryonic stage
4) Secretion of bile pigments and bile salts

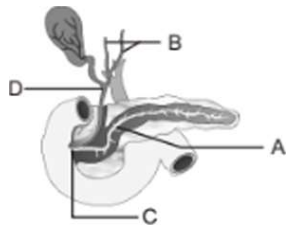
10. Lamina propria is associated with which part of alimentary canal?

1) Serosa 2) Mucosa
3) Submucosa 4) Muscularis layer

11 Which of the following is not associated with the formation of digestive enzymes?

1) Salivary glands 2) Pancreas
3) Crypts of Lieberkuhn 4) Liver

12. Given below is a diagrammatic representation of the dud systems of liver, gall bladder and pancreas



Which of the following labelled structures consists sphincter of oddi?

1) A 2) B 3) C 4) D

13. All of the following components, of digested food are transported into blood capillaries, except

1) Glucose 2) Serine
3) Fructose 4) Chylomicron

14. Mark the enzyme which does not ad upon food substrate

1) Trypsin 2) Chymotrypsin
3) Enterokinase 4) Aminopeptidase

15. Trypsinogen and chymotrypsinogen are activated by _____and _____ respectively in the intestine.

1) Enterokinase Trypsin
2) HCl, Enterokinase
3) Brie/Salts. HCl
4) Pepsin, Enterokinase

16. Gastric secretions are inhibited by

(a) Sympathetic discharge

(b) Acetylcholine

(c) GIP

(d) Secretin

1) (b)only 2) (a) & (c)

3) (a), (c) & (d) 4) (b), (c) & (d)

17. The muscularis mucosa of intestine wall is controlled by the neurons present in (A) in the form of (B) The correct option which fills the blanks (A) and (B) respectively is

1) Muscularis mucosa, Auerbach's plexus

2) Muscularis externa, Myenteric plexus

3) Submucosa, Meissner's plexus

4) Lamina propria, Meissner s plexus

18. Fats absorbed in brush bordered cells as fatty acids are converted into protein coated fat globules called_____.

1) Micelles 2) Monoglycerides

3) Chylomicrons 4) Lacteals

19. Which among the following is an enzyme of terminal digestion?

1) Lipase 2) Enterokinase

3) Maltase 4) Nuclease

20. Enlargement of rectal veins which may be caused by prolonged constipation and characterized by their varicosity is a complication commonly known as

1) Indigestion 2) Haemorrhoids

3) Oxyurasis 4) Pellagra

21. Consider the following statements w.r.t. stomach

(a) Damage to parietal cells can cause pernicious anaemia

(b) Achlorhydria can cause megaloblastic anaemia.

(c) Gastric mucosa has oxyntic cells which secrete pepsinogen

(d) Excessive protein intake can cause a rise in ketone bodies is Wood.

How many of the above statements are correct?

1) One 2) Two 3) Three (4) Four

22. Consider the following statements and choose the correct option from the choices given below

(A) Vomiting reflex is controlled by a neural centre in medulla oblongata of brain

(B) Pro-enzyme in the gastric juice of infants which helps in protein digestion upon activation is chymotrypsinogen

1) Only (A) is correct

2) Only (B) is correct

3) Both (A) & (B) are correct

4) Both (A) & (B) are incorrect

23. Choose the option which correctly describes the mechanism of absorption of digested products

1) Water - Facilitated diffusion

2) Glucose, Na^+ - Secondary active transport

3) Fructose - Simple diffusion

4) Fatty acids - Primary active transport

24. Select the correct statement w.r.t. digestion in the oral cavity

1) Salivary amylase hydrolyzes approximately 70% of starch in the oral cavity

2) Lysozyme present in the saliva acts on the simple lipids

3) Lingual lipase and ptyalin are the two enzymes present in saliva

4) The optimum pH for salivary enzymes is 7.8

which is maintained by HCO_3^- buffers of the saliva

25 The hard chewing surface of teeth is made of A which is formed by B cells that are C in origin. The option which fills the blanks (A), (B) and (C) respectively, correctly is

1) Enamel. Ameloblast. Ectodermal
2) Enamel. Ameloblast. Mesodermal
3) Enamel. Odontoblast. Ectodermal
4) Dentine, Odontoblast, Mesodermal

26. Maximum absorption of digested food occurs in the small intestine which has a very large surface area for this purpose. The structure which does not contribute to increase in surface area of small intestine is

1) Plica circulare
2) Folds of Kerckrings
3) Villi
4) Epiploic appendages

27. Pyloric sphincter regulates the opening of

1) Pharynx into oesophagus
2) Oesophagus into stomach
3) Stomach into duodenum
4) Ileum into large intestine

28. The macrophages of liver are

1) Dendritic cells
2) Kupffer's cells
3) Langerhan's cells
4) Microglial cells

29 Match the following and choose the correct option

Column I (Salivary gland)	Column II (Their location)
a. Parotids	(i) Below tongue
b. Sub-maxillary/ sub-mandibular	(iii) Lower jaw
c. Sub-linguals	(ii) Cheek

1) a(i), b(ii), c(iii) 2) a(i), b(iii), c(ii)
3) a(ii), b(i), c(iii) 4) a(iii), b(ii), c(i)

30. Bile can be prevented from releasing into duodenum by

1) Sphincter of Oddi 2) Cardiac sphincter
3) Pyloric sphincter 4) Ileo-caecal valve

31. Dental formula for the monophyodont teeth of humans is

1) $\frac{0021}{0021}$ 2) $\frac{0003}{0003}$ 3) $\frac{2120}{2120}$ 4) $\frac{2102}{2102}$

32. Upper molars in human dentition have

1) Four roots 2) Three roots
3) Two roots 4) Single root

33. Which of the following can be taken as true stomach in ruminants?

1) Rumen 2) Reticulum
3) Omasum 4) Abomasum

34. Oblique muscle layer is present in

1) Stomach 2) Duodenum
3) Colon 4) All of these

35. Sphincter of Boyden which helps in the filling up of gall bladder is present in

1) Ductus choledocus 2) Duct of Wirsurg
3) Ampulla of Vater 4) Duct of Santorini

36. Thecodont teeth are present in

a. Sphenodon b. Crocodiles
c. Mammals d. Scoliodon
1) c only 2) b & c only
3) a, b, & c only 4) a, b, c & d

37. Cholecystitis refers to inflammation of

1) Gallbladder 2) Stomach
3) Spleen 4) Lungs

38. Which carbohydrate splitting enzyme initiates the chemical process of digestion in the oral cavity?

1) Lysozyme 2) Salivary amylase
3) Pepsin 4) Rennin

39. The type of cells present in the gastric glands which secrete intrinsic factor are

1) Peptic cells 2) Chief cells
3) Parietal cells 4) Both (1) & (2)

40. The proteolytic enzyme found in the gastric juice of infants which helps in the digestion of milk proteins is

1) Renin 2) Rennin
3) Salivary amytase 4) Lysozyme

41. The pancreatic juice contains various enzymes, except

1) Pepsinogen
2) Trypsinogen
3) Chymotrypsniogen
4) Procarboxypeptidases

42. Select the incorrect option

1) Bilirubin and biliverdin are the Me pigments
2) Emulsification is the breakdown of the fats into very small droplets
3) Rennin is a proteolytic enzyme found in the pancreatic juice of infants which helps in the digestion of milk protein
4) Mucus and bicarbonates protect mucosal epithelium from excoriation by highly conc. HO

43. The mam enzymes present in the gastric juice are

1) Trypsin, pepsin and lipase
2) Pepsin, amylase and trypsin
3) Pepsin, rennin and carboxypeptidase
4) Pepsin, lipase and rennin

44. Match the following columns

	Column I	Column II
a.	Lysozyme	(i) HCI
b.	Peptic cells	(i) Antibacterial enzyme
c.	Saliva	(ii) Sublingual gland d Oxyntic cells (iv) Pepsinogen

1) a(i), b(ii), c(iii) , d(iv)
2) a(ii) , b(iv), c(iii), d(i)
3) a(i), b(ii), c(iv), d(iii)
4) a(ii), b(iv), c(i), d(iii)

45. The digestion of which food component is affected if pancreas is removed?

1) Carbohydrates 2) Proteins
3) Fats 4) All of these

46 At which site the emulsification of fat takes place?

1) Pancreas 2) Gallbladder
3) Liver 4) Duodenum

47. Select the ion used for activation of ptyalin

1) Sodium ions 2) Potassium ions
3) Chloride ions 4) None of these

48. Mark the odd one

1) Gastrin 2) Trypsin
3) Secretin 4) Enterocrinin

49 When a piece of bread is chewed it tastes sweet because

1) The sugar contents are drawn out
2) Saliva converts starch into maltose
3) It does not taste sweet
4) The taste buds are stimulated by chewing

50. Which of the following papillae are without taste buds in human tongue?

1) Vallate 2) Fungiform
3) Foliate 4) Filiform

51. Digestion is completed in

1) Duodenum 2) Ileum

3) Stomach 4) Cloaca

52 Select the incorrect option regarding digestion and absorption of substances in different parts of digestive system

1) In large intestine, absorption of water, some minerals and drugs takes place

2) Absorption of water, simple sugars and alcohol takes place in stomach

3) Small intestine is the principal organ for absorption of nutrients

4) The digestion is completed in large intestine

53. Which of the following is a modification of mucosa of alimentary canal?

1) Villi 2) Microvilli

3) Rugae 4) Al of these

54. In acute constipation, purgatives that are used to stimulate intestinal peristalsis and evacuation of fluid faeces contain salts of

1) Sodium 2) Magnesium

3) Potassium 4) Calcium

55. The thick acidic mixture of gastric juice and semi digested food formed in stomach is

1) Bolus 2) Chyme 3) Chyle 4) Slurry

56. The blood capillaries of intestinal vili cannot absorb

1) Glucose

2) Salts

3) Fatty acids and glycendes

4) Ammo acids

57. Vitamin containing cobalt cyanide linkage is

1) A 2) B_1 3) B_6 4) B_{12}

58. Pernicious anaemia is caused by the deficiency of vitamin

1) B_1 2) B_{12} 3) C 4) D

59. Ben-ben is due to deficiency of vitamin

1) B_7 2) A 3) C 4) B_1

60. Gross calorific value of proteins is –

1) 4.1 kcal/g 2) 5.65 kcal/g

3) 9.45 kcal/g 4) 11.2 kcal/g

LEVEL-2 KEY

1	2	3	4	5	6	7	8	9	10
2	3	3	1	4	4	4	2	3	2
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
4	3	4	3	1	3	3	3	3	2
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
1	1	2	3	1	4	3	2	4	1
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
1	2	4	1	1	2	1	2	3	2
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
1	3	4	2	4	4	3	2	2	4
51	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
2	4	4	2	2	3	4	2	4	2

LEVEL-3(PREVIOUS YEARQUESTIONS)

1. Match the items given in Column-I with those in Column-II and choose the correct option.

	Column-I	Column-II
a.	**Rennin**	**(i) Vitamin B_{12}**
b.	**Enterokinase**	**(i) Facilitated transport**
c.	**Oxyntic cells**	**(ii) Milk proteins**
d.	**Fructose**	**(v) Trypsinogen**

1) a(iii), b(iv), c(i), d(ii) **[NEET-2019 (Odisha)]**
2) a(iii), b(iv), c(ii), d(i)
3) a(iv), b(iii), c(i), d(ii)
4) a(iv), b(iii) , c(ii), d(i)

2. Kwashiorkor disease is due to [(NEET-2019 (Odisha)]

1) Protein deficiency not accompanied by calorie deficiency
2) Simultaneous deficiency of proteins and fats
3) Simultaneous deficiency of proteins and calories
4) Deficiency of carbohydrates

3. Match the following structures with their respective location in organs

a. Crypts of Lieberkuhn	(i) Pancreas
b. Glisson's Capsule	(ii) Duodenum
c. Islets of Langerhans	(iii) Small intestine
d. Brunner's Glands	(v) Liver

Select the correct option from the following (NEET-2019)

	a	b	c	d
1)	(ii)	(i)	(ii)	(v)
2)	(ii)	(iv)	(i)	(iii)
3)	(ii)	(iv)	(i)	(ii)
4)	(ii)	(iii)	(i)	(iv)

4. Identify the cells whose secretion protects the lining of gastro-intestinal tract from various enzymes. (NEET-2019)

1) Chief Cells 2) Goblet Cells
3) Oxyntic Cells 4) Duodenal Cells

5. Which of the following glucose transporters is insulin-dependent? (NEET-2019)

1) GLUT I 2) GLUT II
3) GLUT III 4) GLUT IV

6. Which of the following gastric cells indirectly help in erythropoiesis? (NEET-2018)

1) Chief cells 2) Mucous cells
3) Parietal cells 4) Goblet cells

7. Which of the following terms describe human dentition? [NEET-2018]

1) Thecodont, Diphyodont, Homodont
2) Thecodont, Diphyodont, Heterodont
3) Pleurodont. Diphyodont. Heterodont
4) Pleurodont. Monophyodont Homodont

8. Which cells of 'Crypts of Lieberkuhn' secrete antibacterial lysozyme? (NEET-2017)

1) Argentaffin cells 2) Paneth cells
3) Zymogen cells 4) Kupffer cells

9. A baby boy aged two years is admitted to play school and passes through a dental check-up. The dentist observed that the boy had twenty teeth. Which teeth were absent? (NEET-2017)

1) Incisors 2) Canines
3) Pre-molars 4) Molars

10. Which of the following options best represents the enzyme composition of pancreatic juice? [NEET-2017]

1) Amylase, peptidase, trypsinogen. Rennin
2) Amylase pepsin, trypsinogen. Maltase
3) Peptidase, amylase, pepsin, rennin

4) Lipase, amylase, trypsinogen, procarboxy-peptidase

11. Which of the following guards the opening of hepatopancreatic duct into the duodenum? [NEET-2016]

1) Sphincter of Oddi
2) Semlunar valve
3) lieocaecal valve
4) Pyloric sphincter

12. In the stomach, gastric acid is secreted by the [NEET-2016]

1) Acidic eels
2) Gastrin secreting cells
3) Parietal cells
4) Peptic eels

13. The primary dentition in human differs from permanent dentition in not having one of the following type of teeth [Re-AIPMT-2015]

1) Incisors
2) Canine
3) Premolars
4) Molars

14. The enzyme that is not present in succus entericus is [Re-AIPMT-2015]

1) Lipase
2) Maltase
3) Nucleases
4) Nucleosidase

15. Which of the following statements is not correct? [AIPMT-2015]

1) Acini are present n the pancreas and secrete carboxypeptidase
2) Brunner's glands are present in the submucosa of stomach and secrete pepsinogen
3) Goblet cells are present in the mucosa of intestine and secrete mucus
4) Oxyntic cells are present in the mucosa of stomach and secrete HCI

16. Gastric juice of infants contains [AIPMT-2015]

1) Amylase, rennin. Pepsinogen
2) Maltase. pepsinogen, rennin
3) Nuclease, pepsinogen, lipase
4) Pepsinogen, lipase, rennin

17. The ritial step in the digestion of milk in humans is carried out by [AIPMT-2014]

1) Lipase
2) Trypsin
3) Rennin
4) Pepswi

18. Fructose is absorbed into the blood through mucosa cells of intestine by the process called: [AIPMT-2014]

1) Active transport
2) Facilitated transport
3) Simple diffusion
4) Co-transport mechanism

19. Select the correct match of the digested products in humans given in column I with their absorption site and mechanism in column II [NEET-2013]

	Column I	Column II
1)	Fructose, Na^+-	Small intestine, passive Absorption
2)	Glycerol, fatty acids	Duodenum, move as chylomicrons
3)	Cholesterol. maltose	Large intestine, active absorption
4)	Glycine, glucose	Small intestine, active Absorption

20. Where do certain symbiotic microorganisms normally occur in human body [AIPMT (Mains)-2012]

1) Duodenum
2) Caecum
3) Oral lining and tongue surface
4) Vermiform appndix and rectum

21. Anxiety and eating spicy food together man otherwise normal human, may lead to [AIPMT(Prelims)-2012]

1) Vomiting
2) Indigestion
3) Jaundice
4) Diarrhoea

22. Which one of the following enzymes carries out the initial step in the digestion of milk in humans? [AIPMT (Prelims)-2011]

1) Trypsin 2) Pepsin
3) Rennin 4) Lipase

23. Two friends are eating together on a dining table One of them suddenly starts coughing while swallowing some food This coughing would have been due to improper movement of [AIPMT (Prelims)-2011]

1) Tongue 2) Epiglottis
3) Diaphragm 4) Neck

24. Which one of the following correctly represents the normal adult human dental formula? [AIPMT (Mains)-2011]

1) $\frac{2}{2},\frac{1}{1},\frac{2}{2},\frac{3}{3}$ 2) $\frac{3}{3},\frac{1}{1},\frac{3}{3},\frac{3}{3}$
3) $\frac{3}{3},\frac{1}{1},\frac{3}{2},\frac{1}{1}$ 4) $\frac{2}{2},\frac{1}{1},\frac{3}{2},\frac{3}{3}$

25. One of the constituents of the pancreatic juice while poured into the duodenum in humans is [AIPMT (Mains)-2011]

1) Trypsin 2) Enterokinase
3) Trypsinogen 4) Chymotrypsin

26. If for some reason our goblet cells are non-functional this will adversely affect [AIPMT (Prelims)-2010]

1) Smooth movement of food down the intestine
2) Production of somatostatin
3) Secretion of sebum from the sebaceous glands
4) Maturation of sperms

27. Carrier ions like Na' facilitate the absorption of substances like [AIPMT (Prelims)-2010]

1) Fructose and some amino acids
2) Amino acids and glucose
3) Glucose and fatty acids
4) Fatty adds and glycerol

28. If for some reason the parietal cells of the gut epithelium become partialy non-functional. what is likely to happen?[AIPMT(Mains)-2010]

1) The pancreatic enzymes and specialty the trypsin and lipase will not work efficiently
2) The pH of stomach will fall abruptly
3) Steapsin will be more effective
4) Proteins will not be adequately hydrolysed by pepsin into proteoses and peptones

29. Jaundice is a disorder of [AIPMT (Mains)-2010]

1) Excretory system 2) Skin and eyes
3) Digestive system 4) Circulatory system

30. When breast feeding is replaced by less nutritive food low in proteins and calories; the infants below the age of one year are likely to suffer from; [AIPMT (Prelims)-2009]

1) Rickets 2) Kwashiorkor
3) Pellagra 4) Marasmus

31. A young infant may be feeding entirely on mother's milk which is white in colour but the stools which the infant passes out is quite yellowish. What is this yellow colour due to? [AIPMT (Prelims)-2009]

1) Bile pigments passed through bile juice
2) Undigested milk protein casein
3) Pancreatic juice poured into duodenum
4) Intestinal juice

32. Which one of the following pairs of food components in humans reaches the stomach totally undigested? [AIPMT (Prelims)-2009]

1) Starch and fat
2) Fat and cellulose

3) Starch and cellulose

4) Protein and starch

33. What will happen if the secretion of parietal cells of gastric glands is blocked with an inhibitor? [AIPMT (Prelims)-2008]

1) Enterokinase will not be released from the duodenal mucosa and so trypsinogen is not converted to trypsin

2) Gastric juice will be deficient in chymosin

3) Gastric juice will be deficient in pepsinogen

4) In the absence of HCl secretion, inactive pepsinogen is not converted into the active enzyme pepsin.

34. Which one of the following is the correct matching of the site of action on the given substrate, the enzyme acting upon it and the end product? [AIPMT (Prelims)-2008]

1) Stomach : Fats $\xrightarrow{Lipase}$ micelles

2)Duodenum : Triglycerides $\xrightarrow{Trypsin}$ Monoglycerides

3)Smallintestine : Starch $\xrightarrow{\alpha\ Amylase}$ Disaccharide (Maltose)

4) Smallintestine : Proteins $\xrightarrow{Pepsin}$ Amino acids

35. Which one of the following is a fat-soluble vitamin and its related deficiency disease? [AIPMT (Prelims)-2007]

1) Calciferol- Pellagra

2) Ascorbic acid – Scurvy

3) Retinol – Xerophthalmia

4) Cobalamine - Ben-ben

36. Examination of blood of a person suspected of having anaemia, shows large, immature, nucleated erythrocytes without haemoglobin. Supplementing his diet with which of the following, is likely to alleviate his symptoms (AIPMT (Prelims)-2006)

1) Thiamine

2) Folic acid and cobalamine

3) Riboflavin

4) Iron compounds

37. A patient is generally advised to specially, consume more meat, lentils, milk and eggs in diet only when he suffers from (AJPMT (Prelims)-2005)

1) Kwashiorkor 2) Rickets

3) Anaemia 4) Scurvy

38. Secretin and cholecystokinin are digestive hormones. They are secreted in : [AIPMT (Prelims)-2005]

1) Oesophagus 2) Ileum

3) Duodenum 4) Pyloric stomach

39. Which group of three of the following five statements (A-E) contain is all three correct statements regarding beri-beri ?

A. A crippling disease prevalent among the native population of sub-Sahara Africa.

B. A deficiency disease caused by lack of thiamine (vitamin B_1).

C. A nutritional disorder in infants and young children when the diet is persistently deficient in essential protein

D. Occurs in those countries where the staple diet is polished rice.

E. The symptoms are pain from neuritis, paralysis, muscle wasting, progressive oedema, mental deterioration and finally heart failure. **[AIPMT (Prelims)-2005]**

1) A, B and D 2) B, C and E

3) A, C and E 4) B, D and E

40. Protective components of food are

1) Minerals, vitamins and water

2) Minerals, carbohydrate and proteins

3) Minerals, carbohydrate and fats

4) Vitamins water and carbohydrate

41. Which of the following is correct location and function of Meissner's plexus of intestine?

1) Muscularis externa – Peristalsis

2) Muscularis interna – Peristalsis

3) Submucosa - Mucosal secretions

4) Mucosa - Mucosal secretions

42. Which of the following is true regarding the source and nature of the enamel?

1) Odontoblast, mesodermal

2) Odontoblast, ectodermal

3) Ameloblast, mesodermal

4) Ameloblast. Ectodermal

43. Choose the correct enzyme-substrate pair

1) Lipase (carbohydrate)

2) Maltase (lactose)

3) Rennin (casein)

4) Amylase (protein)

44. The following are absent in case of upper one third part of oesophagus, except

1) Visceral peritoneum (Serosa)

2) Digestive gland

3) Myenteric plexus

4) Skeletal muscles

45. Mark the correct statement

1) In lower one third part of oesophagus both Myenteric and Meissner's ptexus are absent

2) Carboxypeptidase is exopeptidase acting on 'N' terminal end of peptide chain

3) Galactosemia is metabolic genetic disorder due to deficiency of the enzyme uridyl transferase

4) Nucleotidase and nucleosidase enzymes are present in pancreatic juice

46. Sphincter of Oddi guards

1) Hepato-pancreatic duct

2) Common bile duct

3) Pancreatic duct

4) Cystic duct

47. Which of the following is correct pairing of site of action and substrate of rennin?

1) Mouth-starch

2) Small intestine-protein

3) Stomach-casein

4) Stomach-fat

48. If liver is removed, the compound which is not absorbed by mucosa of intestine.

1) Proteins 2) Carbohydrates

3) Fats 4) Lactose

49. What is common among amylase, rennin and trypsin?

1) These are produced in stomach

2) These act at a pH lower than 7

3) These all are proteins

4) These all are proteolytic enzymes

50. Hydrolytic enzymes which act in low pH are called

1) Lipases 2) α-Amylase

3) Hydrolases 4) Peroxidase

51. Which of the following hydrolyses internal phosphodiester bonds in a polynucleotide chain?

1) Lipase 2) Protease

3) Endonuclease 4) Exonuclease

52. Brunner s glands are present in

1) Stomach 2) Oesophagus
3) Ileum 4) Duodenum

53. The enzyme enterokinase helps in the conversion of

1) Paracasein into casein
2) Trypsinogen into trypsin
3) Pepsinogen into pepsin
4) Proteins into polypeptides

54. Activation of pro-carboxypeptidase into carboxypeptidase is brought about by

1) Enterokinase 2) Endopeptidase
3) Exopeptidase 4) Trypsin

55. Which of the following is the function of enterogastrone?

1) It inhibits the secretion of gastric juice
2) It stimulates the secretion of digestive juice in the stomach
3) It stimulates the flow of pancreatic juice
4) It regulates the flow of bile

56. The contraction of gall bladder is caused by

1) Cholecystokinin 2) Enterogastrone
3) Gastrin 4) Secretin

57. The hormone that stimulates the stomach to secrete gastric juice is

1) Enterokinase 2) Enterogastrone
3) Gastrin 4) Rennin

58 Cholecystokinin and duocrinin are secreted by

1) Adrenal cortex 2) Thyroid gland
3) Intestine 4) Pancreas

59. Which part of body secretes the hormone secretin?

1) Stomach 2) Oesophagus
3) Ileum 4) Duodenum

60 Which of the following hormones is not secreted by duodenum to inhibit the gastric motility?

1) GIP 2) Enterogastrone
3) Secretin 4) Enterokinase

61. Which of the following carries glucose from digestive tract to liver?

1) Pulmonary vein 2) Hepatic artery
3) Hepatic portal vein 4) None of these

62. In case of vertebrates, lacteals are found in

1) Oesophagus 2) Ear
3) Smal intestine 4) Ischium

63. The movement of ions against the concentration gradient will be

1) Active transport 2) Osmosis
3) Diffusion 4) All of these

64. Vomiting centre is located in the

1) Medulla oblongata
2) Stomach and sometimes in duodenum
3) GI tract
4) Hypothalamus

65. Which one of the following vitamins can be synthesised by bacteria inside the gut?

1) D 2) A 3) B_1 4) C

66. Which one erf the following is a protein deficiency disease?

1) Kwashiorkor 2) Night blindness
3) Eczema 4) Cirrhosis

67. Stool of a person is whitish grey coloured due to malfunction of which of the following organ?

1) Pancreas 2) Spleen
3) Kidney 4) Liver

68. Constipation can be prevented or removed by

1) Taking more roughage
2) Taking purgatives rich in magnesium salt

3) Taking distilled water

4) Both (1) & (2)

69. During prolonged fasting, in what sequence are the following organic compounds used up by the body?

1) First carbohydrates, next fats and lastly proteins

2) First fats, next carbohydrates and lastly proteins

3) First carbohydrates, next proteins and lastly lipids

4) First proteins, next lipids and lastly carbohydrates

70. A moderately active person requires energy per day

1) 2000 kcal 2) 1000 kcal

3) 750 kcal 4) 2800 kcal

			LEVEL-3 KEY						
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	1	3	2	4	3	2	2	3	4
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	3	3	3	2	4	3	2	4	2
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
2	3	2	1	3	1	2	4	3	4
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
1	2	4	3	3	2	1	3	4	1
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
3	4	3	4	3	1	3	3	3	3
51	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
3	4	2	4	1	1	3	3	4	4
61	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**
3	**3**	**1**	**1**	**3**	**1**	**4**	**4**	**1**	**4**

NEURAL CONTROL AND COORDINATION

LEVEL-1

1. **For quick coordination, our neural system is organized through**
   1) Organ to organ connections
   2) Cell to cell connections
   3) Point to point connections
   4) Point to cell connections
2. **Select the correct statements**
   1) Neurons regulates endocrine activity but not vice-versa
   2) Endocrine glands regulates neural activity but not vice-versa
   3) Endocrine glands regulates neural activity and nervous system regulates endocrine glands
   4) Neither hormones control neural activity nor the neurons control the endocrine activity
3. **Which of the following is the correct function of endocrine system with reference to chemical coordination?**
   1) Provides neural integration through hormones
   2) Provides chemical integration through hormones
   3) Provides an organized network of point to point connections for a quick coordination
   4) None of the above
4. **The process through which two or more organs interact and complement the functions of one another, is called**
   1) Coordination 2) Homeostasis
   3) Chemical integration
   4) Transmission of impulse
5. **Select the correct arrangement of neural organization, according to the increasing degree of complexity**
   1) Lower invertebrates → Vertebrates → Insects
   2) Lower invertebrates → Insects → Vertebrates
   3) Vertebrates → Insects → Lower vertebrates
   4) Vertebrates → Lower invertebrates → Insects
6. **Skeletal muscles are controlled by**
   1) Sympathetic nerves
   2) Parasympathetic nerves
   3) Somatic nerves
   4) Autonomic nerves
7. **Which of the following is not related to the autonomic nervous system?**
   1) Peristalsis 2) Digestion
   3) Excretion 4) Memory and learning
8. **What are the two types of nervous system cells?**
   1) Alveoli and veins
   2) Alveoli and bronchioles
   3) Neurons and nephrons
   4) Neurons and glia
9. **Autonomic nervous system affects**
   1) Reflex actions 2) Sensory organs
   3) Internal organs 4) None of these
10. **The system that transmits impulses from CNS to skeletal muscles is**
    1) Sympathetic neural system
    2) Parasympathetic neural system
    3) Somatic neural system
    4) Autonomic neural system

11. Give the correct term for each of the following and choose the correct option from the codes given below

A. Axon or dendron, covered with one or two sheaths

B. Bundles of nerve fibres within the central nervous system

C. Masses of neurons that he in the peripheral nervous system

D. Masses of neurons clustered inside the central nervous system Codes

1) A-Nerve fibre, B-Tracts, C-Ganglia, D-Nuclei

2) A-Tracts, B-Nerve fibre, C-Ganglia, D-Nuclei

3) A-Ganglia, B-Nuclei, C-Tracts, D-Nerve fibre

4) A-Ganglia, B-Tracts, C-Nerve fibre, D-Nuclei

12. Unipolar neurons can be seen in the

a) Embryonic stage b) Cerebellum

c) Cerebral cortex d) Retina of eye

13. Schwann cell is found around

1) Axon 2) Cyton

3) Dendrite 4) Dendron

14. The joint between axon of a neuron and the dendrite of the next is called

1) Synapse 2) Bridge

3) Junction 4) Joint

15. Synaptic vesicle is found in

1) Pre-synaptic neuron

2) Post-synaptic neuron

3) Synaptic cleft

4) None of these

16. Synaptic knob possesses

1) Granular vesicles 2) Nissl's vesicles

3) Synaptic vesicles 4) None of these

17. During the conduction of a nerve impulse, the action potential results from the movement of

1) K^+ ions from extracellular fluid to intracellular fluid

2) Na^+ ions from intracellular fluid to extracellular fluid

3) K^+ ions from intracellular fluid to extracellular fluid

4) Na+ ions from extracellular fluid to intracellular fluid

18. Synaptic vesicles contains chemicals called

1) Synaptic fluid 2) Neurotransmitters

3) Vesicular fluid 4) All of these

19. The highly specialized cells called neurons can

1) Detect stimuli 2) Receive stimuli

3) Transmit stimuli 4) All of the above

20. Which of the following statements are is correct?

I. Dendrites are long fibre, with branched distal end

II. Axons are short fibres which arise from the cell body

III. Cell body of a neuron contains cytoplasm, nucleus with cell organelles and Nissl's granules

IV. The dendrites transmits nerve impulses away from the cell body to a synapse.

The correct option is

1) Only III 2) I and II

3) I, II and III 4) I, II and IV

21. Connection between axon and dendrite is

1) Synapse 2) Synapsis

3) Desmosome 4) Tight junction

22. Which of the following statements are correct for a nerve cell?

I. Each neuron has a cell body

II. Each neuron has a single axon

III. Each neuron has a variable number of dendrites

IV. Neurons are the functional units of nervous system Select the correct option

1) I and IV 2) I, II and III

3) All are incorrect 4) All are correct

23. Maintenance of the ionic gradients across the resting membrane is done by the

1) Active transport of ions

2) Passive transport of ions

3) Active transport of proteins

4) Passive transport of proteins

24. Which of these processes occur during repolarisation of nerve fibre?

I. Open Na^+ channel

II. Closed Na^+ channel

III. Closed K^+ channel

IV. Open K^+ channel

1) II and IV 2) I and III

3) II and III 4) I and II

25. Bipolar neurons occur in

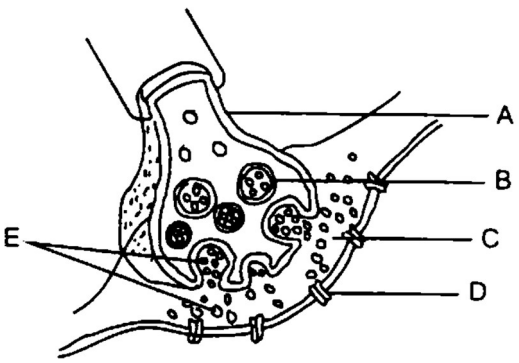
1) Vertebrate embryos

2) Retina of eye

3) Brain and spinal cord

4) Skeletal muscles

26. In the following diagram showing axon terminal and synapse A, B, C, D and e respectively represents



1) A-axon terminal B-synaptic cleft C-synaptic vesicles D-neurotransmitters E-receptors

2) A-axon terminal B-synaptic cleft C-synaptic vesicles D-receptors E-neurotransmitters

3) A-synaptic cleft B-synaptic vesicles C-axon terminal D- neurotransmitters E-receptors

4) A-synaptic cleft B-axon terminal C-synaptic vesicles D- neurotransmitters E-receptors

27. In the central nervous system

1) White matter contains many nerve cell bodies

2) The myelin sheaths are formed by Schwann cells

3) The neurons are protected from changes in plasma composition

4) The cerebrospinal fluid (CSF) is an ultrafiltrate of plasma

28. True about electrical synapses

I. pre and postsynaptic neurons are in very close proximity

II. pre and postsynaptic neurons are separated by synaptic cleft

III. impulse transmission is very fast

IV. electrical synapses are common in our system

Select the correct option

a) I, II, III and IV

2) I and III

3) II and IV

4) I and II

29. Nerve cells do not divide because they do not have

1) Nucleus

2) Centrosome

3) Golgibody 4) Mitochondria

30. In the resting stage of a neuron, concentration gradient generates due to

1) High concentration of K^+ and low concentration of Na+ inside the axon

2) High concentration of Na^+ and low concentration of K^+ inside the axon

3) low concentration of Na^+ outside the axon

4) low concentration of K^+ outside the axon

31. The nerve fibre in its resting stage is

1) More permeable to K^+

2) Semi-permeable to K^+

3) Less permeable to K^+

4) All of these

32. Which of the following statements is correct about the nodes of ranvier?

1) Axolemma is discontinuous

2) Myelin sheath is discontinuous

3) Both neurilemma and myelin sheath are discontinuous

4) Covered by myelin sheath

33. The movement of the nerve impulse across synaptic cleft is primarily

1) A chemical event 2) A physical event

3) An electrical event 4) A biological event

34. Nissl's granules are found in

1) Cell body 2) Dendrites

3) Both (1) and (2) 4) Axon

35. The…… nerve fibres are enveloped with Schwann cells, which form a myelin sheath around the axon

1) Myelinated 2) Non-myelinated

3) Afferent 4) Efferent

36. In the resting state of the neural membrane, diffusion due to concentration gradients, if allowed would drive

1) K^+ into the cell

2) K^+ and Na^+ out of the cell

3) Na^+ into the cell

4) Na^+ out of the cell

37. On the basis of nature of nerve fibres, the nerves are

1) Medullated and non-medullated nerves

2) Myelinated and non-myelinated nerves

3) Sensory, motor and mixed nerves

4) Sensory and motor nerves

38. Bipolar neurons are found in the

1) Embryonic stage 2) Cerebral cortex

3) Cerebellum 4) Retina of eye

39. Ina myelinated neuron, two adjacent myelin sheaths are separated by gaps called

1) Nodes of Ranvier 2) Synaptic cleft

3) Schwann cells 4) Synaptic knob

40. Which of the following statements is true?

1) Saltatory conduction is seen in non-myelinated nerve fibres

2) Nissl's granules are found in muscles fibres

3) Non-myelinated nerve fibres do not posses nodes of Ranvier

4) Non-myelinated nerve fibres are completely enclosed by myelin sheath

41. Myelin sheath is derived from

1) Neuroglial cells 2) Schwann cells

3) Nerve cells 4) All of these

42. Node of Ranvier is found in

1) Muscle bundles 2) Dendrite

3) Right auricle 4) Axon

43. The axons transmit nerve impulses from the cell body to a

1) Synapse 2) Dendrite of the same cell

3) Axon of another cell 4) All of these

44. The neurons may be

1) Multipolar 1) Bipolar

3) Unipolar 4) All of these

45. The cell body of neuron contains certain granular bodies called

1) Cell granules 2) Neuro cells

3) Nissl's granules 4) Neurogranules

46. The band of fibre which joins corpora quadrigemina to cerebellum is called

1) Pons Varolii 2) Valve of Vieussens

3) Corpus callosum 4) Corpus striatum

47. Which converts short time memory into long time remembrance?

1) Reticular system 2) Hippocampus

3) Thalamus 4) Medulla oblongata

48. Brains acts as the …A… and …B… system. Here, A and B refer to

1) Command; control

2) Voluntary; involuntary

3) Compound; voluntary

4) Control; involuntary

49. Under prolonged starvation, brain receives energy from

1) Carbohydrates 2) Fats

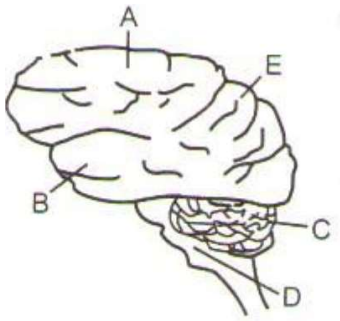
3) Proteins 4) Acetoacetate

50. In which part of the brain, satiety centres is present?

1) Cerebellum 2) Medulla oblongata

3) Cerebral hemisphere 4) Hypothalamus

51. In the diagram of the lateral view of the human brain, parts are indicated by alphabets. Choose the answer in which these alphabets have been correctly matched with the part which they indicate.



1) A-Temporal lobe, B-Parietal lobe, C-Cerebellum, D-Medulla oblongata, E-Frontal lobe

2) A- Frontal lobe, B-Temporal lobe, C-Cerebrum, D-Medulla oblongata, E-Occipital lobe

3) A-Temporal lobe, B-Parietal lobe, C-Cerebrum, D-Medulla oblongata, E-Frontal lobe

4) A- Frontal lobe, B-Temporal lobe, C-Cerebellum, D-Medulla oblongata, E-Parietal lobe

52. Which of the following statements are correct about the midbrain?

I. Located between the thalamus/hypothalamus

II. Has a canal named cerebral aqueduct passes through

III. Dorsal part consists of 4 lobes Choose the correct option

1) I and II 2) II and III

3) I and III 4) I, II and III

53. How many pairs of cranial nerves are found in humans?

1) 10 pairs 2) 11 pairs

3) 12 pairs 4) 13 pairs

54. Hypothalamus does not control

1) Hunger and satiety

2) Thermoregulation

3) Osmoregulation

4) Emotions

55. Which centre is stimulated during increase in body temperature?

1) Anterior hypothalamus
2) Posterior hypothalamus
3) Limbic system
4) Red nucleus

56. Which of the following is not an organ of central nervous system?

1) Brain 2) Cranial nerves
3) Spinal cord 4) None of these

57. Pneumotaxic centre is present in the

1) Pons varoli
2) Cerebellum
3) Corpora quadrigemina
d) Corpus stratum

58. The supporting and nutritive cells found in the brain are

1) Ependymal cells 2) Microglia
3) Astrocytes 4) Oligodendrocytes

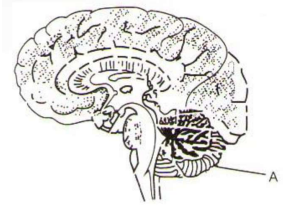
59. The tract of nerve fibres which connects the cerebral hemisphere is

1) Corpus luteum
2) Corpus callosum
3) Corpora quadrigemina
4) Cerebral aqueduct

60. Respiratory control centre is

1) Cerebellum 2) Medulla oblongata
3) Spinal cord 4) cerebrum

61. In the given diagram, what does 'A' represents?



1) Pons Varolii 2) Cerebellum
3) Medulla oblongata 4) Midbrain

62. Which part of the brain is involved in loss of control when a person drinks alcohol?

a) Cerebellum b) Cerebrum
c) Medulla oblongata d) Pons Varolii

63. Which function will be lost due to damage of occipital lobe?

1) Hearing 2) Speech
3) Vision 4) Memory

64. The part of the brain where the centre for hunger and thirst is located is

1) Cerebrum 2) Hypothalamus
3) Cerebellum 4) Medulla oblongata

65. The central information processing organ of our body is

1) Heart 2) Spinal cord
3) Brain 4) All of the above

66. The respiratory rhythm centre is present in the

1) Cerebrum 2) Cerebellum
3) Hypothalamus 4) Medulla oblongata

67. The medulla contains centres which control

1) Respiration 2) Cardiovascular reflexes
3) Gastric secretions 4) All of the above

68. A man is admitted in a hospital. He is suffering from an abnormally low body temperature, loss of appetite and extreme thirst. His brain scan would probably show a tumour in

1) Medulla oblongata 2) Pons Varolii
3) Cerebellum 4) Hypothalamus

69. Association areas are regions found in

1) Cerebrum 2) Cerebral cortex
3) Cerebellum 4) Diencephalon

70. The correct sequence of meetings of brain from outside to inside is

1) duramater → arachnoid → piamater
2) arachnoid → duramater → piamater

c) piamater → duramater → arachnoid

d) duramater → piamater → arachnoid

71. The process of response to a peripheral nervous stimulation, that occurs involuntarily is called

1) Reflactory potential 2) Action potential

3) Reflex action 4) Activation potential

72. Given below are different components of reflex are

I. Effector organ II. Interneuron

III. Motor neuron IV. Sensory neuron

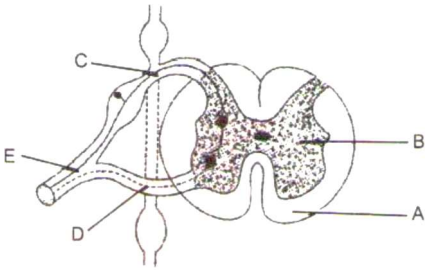
V. Sensory receptor

Arrange these in correct order of action potential that follows a sensory receptor stimulation

1) V, IV, III, II, I 2) V, IV, II, III, I

3) V, III, IV, I, II 4) V, II, IV, III, I

73. In a cross-section of the spinal cord A, B, C, D and E represents



1) A-White matter, B-Grey matter, C-Dorsal matter, D-Ventral root, E-Spinal nerve

2) A-White matter, B-Grey matter, C-Ventral root, D-Dorsal root, E-Spinal nerve

3) A-Grey matter, B-White matter, C-Ventral matter, D-Dorsal root, E-Spinal matter

4) A-Grey matter, B-White matter, C-Dorsal root, D-Ventral root, E-Spinal nerve

74. Reflex action involves

1) Spinal cord

2) Cerebellum

3) Medulla oblongata 4) Optic fibre

75. is not involved in knee-jerk reflex

1) Muscle spindle 2) Motor neuron

3) Brain 4) Interneurons

76. The reflex arc, which is made of two neurons is known as

1) Monosynaptic reflex arc

2) Disynaptic reflex arc

3) Polysynaptic reflex arc

4) Asynaptic reflex arc

77. Which is not a reflex action?

1) Salivation

2) Eye opening and closing

3) Response to pinching pin in a frog leg

4) Sweating

78. One of the examples of the action of the autonomous nervous system is

1) Knee-jerk response

2) Papillary reflex

3) Swallowing of food

4) Peristalsis of the intestines

79. Eustachian tube connects …A… cavity with …B… Choose the correct option for A and B

1) A-outer ear; B-pharynx

2) A-inner ear; B-pharynx

3) A-pinna; B-pharynx

4) A-middle ear; B-pharynx

80. The anterior portion of sclera is called

1) Iris 2) Cornea

3) Ciliary body 4) Pupil

81. Rods and cones are present in

1) Iris 2) Cornea

3) Sclerotic 4) Retina

82. When different cones of human eye are stimulated equally, a sensation of light is produced

1) Red 2) White 3) Green 4) Blue

83. In humans, tympanic membrane (ear drum) separates lympanic cavity from

1) Pinna 2) Auditory meatus
3) Eustachian tube 4) Cochlea

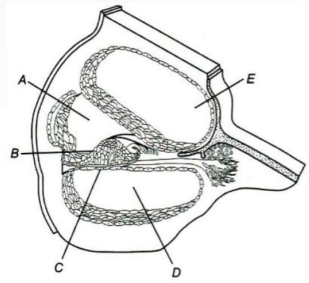
84. Part of ear where sound is transduced is

1) Tympanic membrane
2) Malleus, incus and stapes
3) Semi-circular canal
4) Cochlea

85. Olfactoreceptors are

1) Touch receptors 2) Pain receptors
3) Smell receptors 4) Pressure receptors

86. Below is the diagram of the sectional view of cochlea of human ear. Identify A and E



Choose the correct option

1) A-Scala media, B-Organ of Corti, C-Basiliar membrane, D-Scala tympani, E-Scalavestibuli
2) A-Scalavestibuli, B-Organ of Corti, C-Basiliar membrane, D-Scala tympani, E-Scala media
3) A-Scalavestibuli, B-Basiliar membrane, C-Organ of Corti, D-Scala tympani, E-Scala media
4) A-Scalavestibuli, B-Basiliar membrane, C-Scala tympani, D-Organ of Corti, E-Scala media

87. Photoreceptor cells of human eye are

1) Rods 2) Cones
3) Both (1) and (2) 4) Ganglion cells

88. Which is thickened to form organ of Corti?

1) Reissner's membrane
2) Basilar membrane
3) Tectorial membrane
4) All of these

89. The point in eye of mammals from which optic nerves and blood vessels leave the eye ball is

1) Yellow spot 2) Blind spot
3) Pars optica 4) None of these

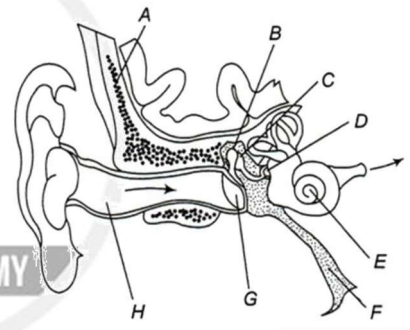
90. Choroid becomes thick in the anterior part of eye to form the

1) Iris 2) Ciliary body
3) Pupil 4) Lens

91. The size of pupil is controlled by the

1) Ciliary muscles 2) Suspensory ligaments
3) Cornea 4) Iris muscles

92. Given is the diagram of ear. Identify A to H



Choose the correct option

1) A-Temporal bone, B-Malleus, C-Incus, D-Stapes, E-Cochlea, F-Eustachian tube, G-Tympanic membrane, H-External auditory canal
2) A-Tympanic membrane, B-Malleus, C-Incus, D-Stapes, E-Cochlea, F-Eustachian tube, G-Temporal bone, H-External auditory canal
3) A-Tympanic membrane, B-Incus, C-Malleus, D-Stapes, E-Cochlea, F-Eustachian tube, G-Temporal bone, H-External auditory canal
4) A-Temporal bone, B-Malleus, C-Incus, D-Cochlea, E-Stapes, F-Eustachian tube, G-lympanic membrane, H-External auditory canal

93. Protein found in eye lens is

1) Crystalline 2) Collagen
3) Opsin 4) Rhodopsin

94. Labyrinth, fluid-filled inner ear consists of

1) Bony labyrinth 2) Membranous labyrinth
3) Both (1) and (2) 4) Ear drum

95. Arrange the following events in a correct order that lead to the formation of an auditory impulse in human ears from the codes given below

I. Vibration is transferred from the malleus to the incus and then to stapes
II. Basiliar membrane moves up and down
III. Nerve impulse is transmitted by cochlear nerve to auditory cortex of brain for impulse analysis and recognition
IV. Sound waves pass through ear canal
V. Stereocilia of hair cells of organ of Corti rub against tectorial membrane
VI. Sound waves causes ear drum to vibrate
VII. Nerve impulse is generated
VIII. Vibrations move from fluid of vestibular canal to the fluid tymapanic canal
IX. Membrane at oval window vibrates

Codes

1) IV, VI, I, IX, VIII, II, V, VII, III
2) I, II, III, IV, V, VI, VII, VIII, IX
3) IX, VIII, VII, VI, V, IV, III, II, I
4) IV, VI, I, VIII, IX, II, V, VII, III

96. Damage to hearing is caused by sound which exceeds

1) 70 decibels 2) 100 decibels
3) 110 decibels 4) 120 decibels

97. Our paired eyes are located in sockets of the skull called

1) Orbits 2) Cornea 3) Iris 4) Lens

98. 'Adaptation' of eyes in dark is due to

1) Depletion of vision pigment in rod
2) Depletion of vision pigment in cones
3) Repletion of vision pigment in rods
4) Repletion of vision pigment in cones

99. The pressure on either sides of the ear drum gets equalized by

1) Pinna 2) Eustachian tube
3) Cochlea 4) Labyrinth

100. In human eyes, colour perception is done by

1) Rod cells only 2) Cone cells only
3) Both (1) and (2) 4) Choroid layer cells

101. The vestibular apparatus of human ear is composed of

1) Oval window
2) Otolith organs
3) Three semicircular canals
4) Both (2) and (3)

102. At the posterior pole of the eye lateral to the blind spot, there is a yellowish pigmented spot called

1) Corpus luteum 2) Fovea
3) Macula quadrigenina 4) Macula lutea

103. Scalavestibuli, scala media and scala tympani of human ear contains

1) Perilymph, endolymph and perilymph respectively
2) Endolymphy, perilymph and endolymph respectively
3) Perilymphy, endolymph and endolymph respectively
4) Perilymph, haemolymph and endolymph respectively

104. Vitreous humour is

1) Colloid
2) Watery fluid
3) Mucoid connective tissue
4) All of the above

105. If an organism has more rods, it will

1) Active during day
2) Possess colour vision
3) Active during night
4) Both (1) and (2) are possible

106. In eye donation, which one of the following parts of donor's eye is utilized?

1) Retina 2) Cornea 3) Lens 4) Iris

107. The middle layer of human eye, choroid contains …A… and looks …B… in colour Choose the correct option for A, B

1) A-blood vessels, B-bluish
2) A-connective tissue, B-redish
3) A-bipolar cells, B-blackish
4) A-muscle fibre, B-brownish

108. Wax gland present in the human ear canal is called

1) Sebaceous gland 2) Mucous gland
3) Ceruminous gland 4) Sweat gland

109. There are two types of photoreceptor cells, i. e., …A… and …B… . These cells contains photopigments Here, A and B refers to

1) A-rods; B-cones 2) A-cones; B-rhodopsin
3) A-rhodopsin; B-rods 4) A-rods; B-fovea

110. …A… is attached to the tympanic membrane and the …B… is attached to the oval window of the cochlea

Choose the correct option for A and B

1) A-Malleus, B-stapes
2) A-Malleus, B-incus
3) A-Stapes, B-malleus
d) A-Incus, B-stapes

111. Which of the following is present in rod cells and useful in night vision?

1) Vitamin-K 2) Melanin
3) Rhodopsin 4) Vitamin-C

112. In rhodopsin, the vitamin present is

1) Vitamin-B 2) Vitamin-C
3)Vitamin-A 4)Vitamin-D

113. The black pigment layer in human eye, that reduces internal reflection is located in

1) Iris 2) Retina
3) Cornea 4) Sclerotic

114. Which of the following prevents internal reflection of light within the eye?

1) Cornea 2) Choroid
3) Sclera 4) Conjunctiva

115. Blind spot is called to because of

1) The presence of photoreceptor cells
2) Presence of optic nerves
3) The absence of photoreceptor cells
4) None of the above

116. The choroid layer of human eye is

1) Thin over the posterior 2/3 of eyeball
2) Thick over the posterior 4/3 of eyeball
3) Coloured over the anterior 2/3 of eyeball
4) Opaque structure over the anterior 4/3 of eyeball

117. Which of the following is correct for lens focusing while seeing distant object?

1) Tightly stretched suspensory ligament and rounded lens
2) Contracted ciliary muscles and rounded lens
3) Relaxed ciliary muscles and tightly stretched suspensory ligament

4) Contracted ciliary muscles and relaxed suspensory ligaments

118. At blind spot

1) Optic nerves leave the eye and retinal blood vessels enter it

2) Retinal blood vessels leave the eye and optic nerves enter it

3) There is no involvement of optic nerves at all

4) There is no involvement of retinal blood vessels at all

119. The rods contains a purplish-red protein called

1) Opsin 2) Rhodopsin

3) Photopsin 4) Iodopsin

120. Which part of retina consists of only cones?

1) Fovea centralis 2) Optic nerve

3) Blind spot 4) Chiasmata

LEVEL-1 KEY

1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
3	1	2	1	2	3	4	4	3	3
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
1	1	1	1	1	3	4	2	4	1
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
1	2	1	1	2	2	3	2	2	1
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
1	2	1	2	1	3	3	4	1	3
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
2	4	1	4	3	2	3	1	4	4
51	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
4	3	3	3	1	2	1	1	2	2
61	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**
2	1	3	2	3	4	4	4	2	1
71	**72**	**73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**
3	2	1	1	3	1	2	4	4	2
81	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**	**90**
4	2	2	4	3	1	3	2	2	2
91	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**100**
4	2	1	3	2	4	1	3	2	2
101	**102**	**103**	**104**	**105**	**106**	**107**	**108**	**109**	**110**
4	4	1	4	3	2	1	3	1	1
111	**112**	**113**	**114**	**115**	**116**	**117**	**118**	**119**	**120**
3	3	2	4	3	1	3	1	2	1

LEVEL-2

1. Find the incorrect match w.r.t effects of sympathetic and parasympathetic division of ANS

	Sympathetic	Parasympathetic
1)	Pupillary dilation	Pupillary constriction
2)	Increase in heart rate	Decrease in heart rate
3)	Decreased motility of stomach and Intestine	Increased mobility of stomach and intestine
4)	Bronchioles constrict	Bronchioles dilate

2. What will happen if amygdala of a person is damaged?

1) Person will forget recent events and cannot commit anything to memory

2) Person will fail to recognise fearful expression of others / or to express fear m appropriate situation

3) Person fads to maintain the body temperature

4) Person fails to show muscle coordination

3. Bowman s glands are present in

1) Bowman's capsule of nephron

2) Olfactory epithelium

3) Taste buds

4) Follicles of eye lashes

4. In a resting membrane, potassium diffuses from

1) Intracellular fluid to extracellular fluid

2) Extracellular fluid to intracellular fluid through diffusion ion channels

3) Does not move by diffusion

4) Extracellular fluid to intracellular fluid through voltage gated sodium ion channel

5. Cells of nervous system which restrict the movement of substances between blood and interstitial fluid of the CNS are

1) Oligodendrocytes 2) Schwann cells

3) Astrocytes 4) Microglial cells

6. Alzheimer's disease is due to

1) Excessive secretion of dopamine

2) Deficiency of adrenaline

3) Excessive secretion of acetylcholine

4) Deficiency of acetylcholine

7. The point in retina where the visual acuity or resolution is greatest is

1) Optic disc 2) Blind spot

3) Macula lutea 4) Fovea centralis

8. The change in membrane potential from -70 mV to - 80 mV is represented as

1) Resting membrane potential

2) Hyperpolansation graded potential

3) Depolarization potential

4) Action potential

9. Where do axons in olfactory tracts terminate to decode the message they cany?

1) Parietal lobe 2) Tempore lobe

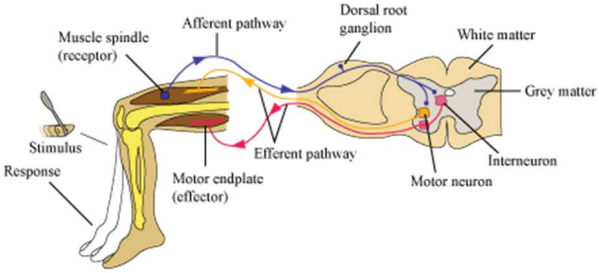
3) Frontal lobe 4) Olfactory bulb

10. Which gland/muscle is innervated by cholinergic sympathetic post ganglionic neurons?

1) Cardiac muscle 2) Sweat gland

3) Salivary gland 4) Iris muscle

11. Which statement is not related to the following diagrammatic presentation?



1) This figure is showing knee jerk reflex

2) It shows two reflex arcs

3) Monosynaptic reflex arc has only one synapse in CNS

4) Polysynaptic reflex arc goes to the same muscle to relax it

12. Vestibular apparatus does not include

1) Crista and macula

2) Saccule and utride

3) Basilar and Reissner membrane

4) Semicircular canals

13. Which cranial nerve is linked to both movement of the eyeball and power of accommodation?

1) I 2) II 3) IV 4) VI

14 Part of the human brain which contains centres which control respiration, cardiovascular reflexes and gastric secretions is

1) Cerebral hemisphere

2) Pons

3) Hypothalamus

4) Medulla oblongata

15. Which of the following best describes the state of a neuron at rest?

1) K* ions leak into the neuron at rest

2) The inside and outside of a neuron have the same electrical charge

3) The outside of a neuron is more negatively charged than the inside

4) The inside of a neuron is more negatively charged than the outside

16. Choose the incorrect statement

1) Fovea is the thinned-out portion of retina where only cones are densely packed, and visual acuity (resolution) is greatest.

2) Pineal body secretes a hormone melatonin which plays a very important role in regulation of the 24 hour (diurnal) rhythm of our body

3) Gastrointestinal tract secretes four major peptide hormones namely gastrin, secretin, cholecystokinin and gastric inhibitory peptide

4) Oxytocin and vasopressin is secreted by neurohypophysis (Pars nervosa) also known as posterior pituitary

17. Part of cerebral lobe which is responsible for vision is

1) Frontal lobe 2) Parietal lobe

3) Occipital lobe 4) Temporal lobe

18. Hypothalamus present at the base of the thalamus is involved in all of the following functions, except

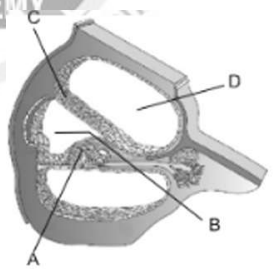
1) Vomiting

2) Urge of eating and drinking

3) Controls body temperature

4) Secretes somatocrinin

19. Following is a diagrammatic representation of sectional view of cochlea



Which of the following labelled structures are contact with perilymph?

1) A & B 2) B only

3) C & D 4) A. B & C

20. Structure or region incorrectly paired with its function is

1) Cerebellum - Coordination of movement and balance

2) Limbic system - Motor control

3) Pons - Pneumotaxic centres

4) Cerebral aqueduct - Connects diocoel and metacoel

21. The cranial nerve involved in controlling facial expressions is

1) IV 2) III 3) VI 4) VII

22. Cluster of cell bodies of neurons CNS is called

1) Ganglia 2) Nuclei
3) Soma 4) Nave

23 Major part of peripheral nervous system is somatic neural system which relays impulses from CNS to

1) Involuntary muscles 2) Skeletal muscles
3) Skin 4) Smooth muscles

24 Vomiting is the ejection of stomach contents through the mouth. This reflex action is controlled by the A in the B .

	A	B
1)	Nausea centre	Medulla
2)	Vomit centre	Medulla
3)	Vomit centre	Hypothalamus
4)	Hunger centre	Hypothalamus

25. Sensations of touch, pain, pressure get decoded at ___ of CNS.

1) Frontal lobe 2) Parietal lobe
3) Temporal lobe 4) Occipital lobe

26. Paralysis of jaw muscles is due to loss of function of which cranial nerve?

1) III 2) V 3) VII 4) X

27. Cranial nerves in man which is both sensory and motor is

1) Optic 2) Olfactory
3) Trigeminal 4) Auditory

28. Cranial nerves linked with taste buds are

1) VII & III 2) IX & II
3) IV & VIII 4) VII & IX

29. Smallest cranial nerve of the body is

1) Trigeminal 2) Abducens
3) Opthalmic 4) Trochlear

30. The eighth cranial nerve of man is

1) Abducens 2) Trochlear
3) Auditory 4) Oculomotor

31. The number of spinal nerves in man is

1) 31 2) 62 3) 12 4) 24

32. Pseudo urn polar neurons occur in

1) Pyramidal cells of cerebral cortex
2) Retina of eye
3) Schneiderian membrane
4) Dorsal root ganglion of spinal cord

33. Factor responsible for the depolarization of the neuron is

1) Opening of voltage gated K^+ channel
2) Opening of voltage gated Na^+ channel
3) Closure of voltage gated K^+ channel
4) Closure of voltage gated Na^+ channel

34. If the inside of the membrane becomes more negative than the resting membrane potential it leads to

1) Depolarization 2) Repolarization
3) Hyperpolarization 4) Hypopolarisation

35. Suppose the terminal ends of an axon are in contact with dendrites of four adjacent neurons, the nerve impulse of the axon will

1) Travel in all the four neurons
2) Get distributed in al the four neurons resulting in a weak impulse
3) Travel only in one neuron which is in closest contact and with the same intensity
4) Travel in none of the neurons because the impulse travels from dendrites of one neuron into the axon of another neuron

LEVEL-2 KEY									
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
4	2	2	1	3	4	4	2	2	2
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
4	3	2	4	4	4	3	1	3	2
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
4	2	2	2	2	2	3	4	4	3
31	**32**	**33**	**34**	**35**					
2	4	2	3	1					

LEVEL-3(PREVIOUS YEARQUESTIONS)

1. Which of the following statements is not correct? [NEET-2019 (Odisha)]

1) In the knee-jerk reflex, stimulus is the stretching of muscle and response is its contraction

2) An action potential in an axon does not move backward because the segment behind is in a refractory phase

3) Depolarisation of hair cells of cochlea results in the opening of the mechanically gated potassium-ion channels

4) Rods are very sensitive and contribute to daylight vision

2. Which of the following receptors are specifically responsible for maintenance of balance of body and posture? [NEET-2019 (Odisha)]

1) Crista ampullaris and macula

2) Basilar membrane and otoliths

3) Hair cells and organ of corti

4) Tectorial membrane and macula

3. Which part of the brain is responsible for thermoregulation? [NEET-2019]

1) Cerebrum 2) Hypothalamus

3) Corpus callosum 4) Medulla oblongata

4. Which of the following statements is correct? [NEET-2019]

1) Cornea is an external, transparent and protective proteinacious covering of the eye-ball

2) Cornea consists of dense connective tissue of elastin and can repair itself.

3) Cornea is convex, transparent layer which is highly vascularised.

4) Cornea consists of dense matrix of collagen and is the most sensitive portion the eye

5. Which of the following structures or regions is incorrectly paired with its functions? [NEET-2018]

(1) Medulla oblongata:	controls respiration and cardiovascular reflexes
(2) Limbic system:	consists of fibre tracts that interconnect different regions of brain: controls movement
(3) Corpus callosum :	band of fibers connecting

	left and right cerebral hemispheres.
(4) Hypothalamus	production of releasing hormones and regulation of temperature, hunger and thirst

6. The transparent lens in the human eye «s held its place by [NEET-2018]

1) Ligaments attached to the ciliary body
2) Ligaments attached to the iris
3) Smooth muscles attached to the ciliary body
4) Smooth muscles attached to the iris

7. Myelin sheath is produced by [NEET-2017]

1) Schwann Cells and Oligodendrocytes
2) Astrocytes and Schwann Cells
3) Oligodendrocytes and Osteoclasts
4) Osteoclasts and Astrocytes

8. Receptor sites for neurotransmitters are present on [NEET-2017]

1) Membranes of synaptic vesicles
2) Pre-synaptic membrane
3) Tips of axons
4) Post-synaptic membrane

9. Good vision depends on adequate intake of carotene rich food Select the best option from the following statements [NEET-2017]

(a) Vitamin A derivatives are formed from carotene.

(b) The photopigments are embedded in the membrane discs of the inner segment.

(c) Retinal is a derivative of vitamin A

(d) Retinal is a light absorbing part of all the visual photopigments.

1) (a) & (b) 2) (a), (c) & (d)
3) (a)&(c) 4) (b), (c) & (d)

10. Choose the correct statements [NEET (Phase-2)-2016]

1) Nociceptors respond to changes in pressure
2) Meissner's corpuscles are thermoreceptors
3) Photoreceptors in the human eye are depolarized during darkness and become hyperpolarized in response to the light stimulus
4) Receptors do not produce graded potentials

11. Photosensitive compound in human eye is made up of [NEET-2016]

1) Transducin and Retinene
2) Guanosine and Retinol
3) Opsin and Retinal
4) Opsin and Retinol

12. In mammalian eye. the fovea' is the center of the visual field, where [Re-AIPMT-2015]

1) More rods than cones are found
2) High density of cones occur, but has no rods
3) The optic nerve leaves the eye
4) Only rods are present

13 Destruction of the anterior horn cells of the spinal cord would result in loss of [Re-AIPMT-2015]

1) Integrating impulses
2) Sensory impulses
3) Voluntary motor impulses
4) Commissural impulses

14. A gymnast is able to balance his body upside down even in the total darkness because of [AIPMT-2015]

1) Organ of corti
2) Cochlea
3) Vestibular apparatus
4) Tectorial membrane

15. Which of the following regions of the brain is incorrectly paired with its function? [AIPMT-2015]

1) Cerebrum-calculation and contemplation

2) Medulla oblongata-homeostatic control

3) Cerebellum-language comprehension

4) Corpus caltosum-communication between the left and the right cerebral cortices

16. Injury localized to the hypothalamus would most likely disrupt [AIPMT-2014]

1) Short-term memory

2) Co-ordination during locomotion

3) Executive functions, such as decision making

4) Regulation of body temperature

17. Which one of the following statements is not correct? [AIPMT-2014]

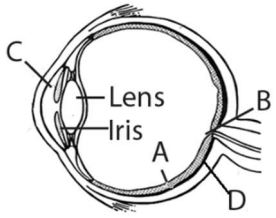
1) Retinal is the light absorbing portion of visual photo pigments

2) In retina the rods have the photopigment rhodopsin while cones have three different photopigments

3) Retinal is a derivative of Vitamin C

4) Rhodopsin is the purplish red protein present in rods only

18. Parts A, B, C and D of the human eye are shown in the diagram Select the option which gives correct identification along with its functions/ characteristics: [NEET-2013]



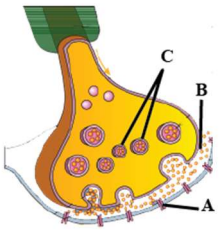
1) B - Blind spot - has only a few rods and cones.

2) C - Aqueous chamber - reflects the light which does not pass through the lens.

3) D - Choroid - its antenor part forms ciliary body.

4) A - Retina - contains photo receptors - rods and cones.

19. A diagram showing axon terminal and synapse is given Identify correctly at least two of A-D. [NEET-2013]



1) B - Synaptic connection D-K^+

2) A - Neurotransmitter B - Synaptic cleft

3) C - Neurotransmitter D – Ca^{++}

4) A – Receptor C - Synaptic vesicles

20. The human hind brain comprises three parts, one of which is [AIPMT (Prelims)-2012]

1) Cerebellum 2) Hypothalamus

3) Spinal cord 4) Corpus callosum

21. Which part of the human ear plays no role in hearing as such but is otherwise very much required? [AIPMT (Prelims)-2012]

1) Ear ossicles 2) Eustachian tube

3) Organ of Corti 4) Vestibular apparatus

22. A person entering an empty room suddenly finds a snake right in front on opening the door. Which one of the following is likely to happen in his neuro-hormonal control system?[AIPMT (Prelims)-2012]

1) Sympathetic nervous system is activated releasing epinephrin and norepinephrin from adrenal cortex

2) Sympathetic nervous system is activated releasing epinephrin and norepinephrin from adrenal medulla

3) Neurotransmitters diffuse rapidly across the cleft and transmit a nerve mpulse

4) Hypothalamus activates the parasympathetic division of bran

23. The purplish red pigment rhodopsin contained in the rods type of photoreceptor cells of the human eye. is a derivative of [AIPMT (Prelims)-2011]

1) Vitamin A 2) Vitamin B_1

3) Vitamin C 4) Vitamin D

24. When a neuron is in resting state i.e. not conducting any impulse, the axonal membrane is [AIPMT (Prelims)-2011]

1) Comparatively more permeable to K^+ ions and nearly impermeable to Na^+ ions.

2) Comparatively more permeable to Na^+ ions and nearly impermeable to K^+ ions

3) Equally permeable to both Na^+ and K^+ ions

4) Impermeable to both Na^+ and K^+ ions

25. The nerve centres which control the body temperature and the urge for eating are contained in [AIPMT (Prelims)-2010]

1) Thalamus 2) Hypothalamus

3) Pons 4) Cerebelum

26. Select the answer with correct matching of the structure, its location and function

[AIPMT(Mains)-2010]

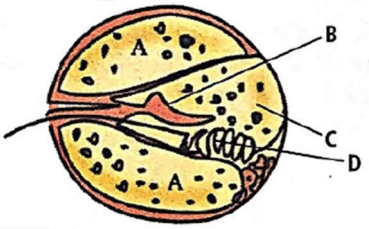
	Structure	Location	Function
1)	Eustachian tube	Anterior part of internal ear	Equalizes air pressure on ether sides of tympanic membrane
2)	Cerebellum	Mid brain	Controls respiration and gastric secretions
3)	Hypothalamus	Fore brain	Controls body temperature, urge for eat ng and drinking
4)	Blind spot	Near the place where optic nerve leaves the eye	Rods and cones are present but inactive here

27. Which part of human brain is concerned with the regulation of body temperature? [AIPMT (Prelims)-2009]

1) Cerebellum 2) Cerebrum

3) Hypothalamus 4) Medulla Oblongata

28. Given below is a diagrammatic cross-section of a single loop of human cochlea. Which one of the following options correctly represents the names of three different parts?[AIPMT (Prelims)-2008]



1) A – Perilymph, B - Tectorial membrane, C – Endolymph

2) B - Tectorial membrane, C – Perilymph, D - Secretory cells

3) C – Endolymph, D - Sensory hair cells, A – Serum

4) D - Sensory hair cells, A – Endolymph, B - Tectorial membrane

29. During the propagation of a nerve impulse, the action potential results from the movement of [AIPMT (Prelims)-2008]

1) Na^+ ions from extracellular fluid to intracellular fluid

2) K^+ ions from extracellular fluid to intracellular fluid

3) Na^+ ions from intracelular fluid to extracellular fluid

4) K^+ ions from intracellular fluid to extracellular fluid

30. Which one of the following pairs of structures distinguishes a nerve cell from other types of cells? [AIPMT (Prelims)-2007]

1) Nucleus and mitochondria

2) Perikaryon and dendrites

3) Vacuoles and fibers

4) Flagellum and medullary sheath

31. During the transmission of nerve impulse through a nerve fibre, the potential on the inner side of the plasma membrane has which type of electric charge? [AIPMT (Prelims)-2007]

1) First positive, then negative and again back to positive

2) First negative, then positive and again back to negative

3) First positive, then negative and continue to be negative

4) First negative, then positive and continue to be positive.

32 Which one of the following is an example of negative feed-back loop in humans? [AIPMT (Prelims)-2007]

1) Secretion of sweat glands and constriction of skin blood vessels when it is too hot.

2) Constriction of skin blood vessels and contraction of skeletal muscles when it is too cold.

3) Secretion of tears after falling of sand particles in to the eye

4) Salivation of mouth at the sight of delicious food.

33 Bowman's glands are located in the [AIPMT (Prelims)-2007]

1) Olfactory epithelium of our nose

2) Proximal end of uriniferous tubules

3) Anterior pituitary

4) Female reproductive system of cockroach

34. Which one of the following statements is correct? [AIPMT (Prelims)-2006]

1) Neurons regulate endocrine activity, but not vice versa

2) Endocrine glands regulate neural activity and nervous system regulates endocrine glands

3) Neither hormones control neural activity nor the neurons control endocrine activity

4) Endocrine glands regulate neural activity, but not vice versa

35. Which one of the following not act as a neurotransmitter? [AIPMT (Prelims)-2006]

1) Acetylcholine 2) Epinephrine

3) Nor epinephrine 4) Cortisone

36. Bowman s glands are found in [AIPMT (Prelims)-2006]

1) Olfactory epithelium

2) External auditory canal

3) Cortical nephrons only

4) Juxtamedullary nephrons

37. In a man. abducens nerve is injured. Which one of the following functions will be affected? [AIPMT (Prelims)-2005]

1) Movement of the eye ball

2) Swallowing

3) Movement of the tongue

4) Movement of the neck

38. One of the examples of the action of the autonomous nervous system is
[AIPMT (Prelims)-2005]
1) Knee-jerk response
2) Pupillary reflex
3) Swallowing of food
4) Peristalsis of the intestines

39. Parkinson's disease (characterized by tremors and progressive rigidity of limbs) is caused by degeneration of brain neurons that are involved in movement control and make use of neurotransmitter [AIPMT (Prelims)-2005]
1) Acetylcholine 2) Norepinephrine
3) Dopamine 4) GABA

40. Poisons like cyanide inhibit Na^+ efflux and K^+ influx during cellular transport. This inhibitory effect is reversed by an injection of ATP. This demonstrates that
1) ATP is the earner protein in the transport system
2) Energy for Na^+-K^+ exchange pump comes from ATP
3) ATP is hydrolysed by ATPase to release energy
4) Na^+-K^+ exchange pump operates in the cell

41. In the resting state of the neural membrane, diffusion due to concentration gradients, if allowed, would drive
1) K^+ into the cell
2) K^+ and Na^+ out of the cell
3) Na^+ into the cell
4) Na^+ out of the cell

42. Alzheimer's disease in humans is associated with the deficiency of
1) Gamma ammobutyric acid (GABA)
2) Dopamine
3) Glutamic acid
4) Acetylcholine

43. Which cranial nerve has the highest number of branches?
1) Vagus nerve 2) Trigeminal
3) Facial nerve 4) None of these

44 Injury to vagus nerve in humans is not likely to affect
1) Tongue movements
2) Gastrointestinal movements
3) Pancreatic secretion
4) Cardiac activity

45. The sympathetic nerves, in mammals, arise from
1) Sacral nerves
2) 3rd, 7th, 9th and 10th cranial nerves
3) Thoracico-lumbar segments of spinal cord
4) Cervical nerves

46. Sympathetic nervous system induces
1) Secretion of digestive juices
2) Increase in heart beat rate
3) Secretion of saliva
4) All of these

47. Post ganglionic fibre of sympathetic nervous system connected with sweat gland secrete
1) Adrenaline 2) Epinephrine
3) Acetylcholine 4) GABA

48. Which of following is not the action of sympathetic nervous system?
1) Dilation of pupil
2) Storage of bile in the gall bladder
3) Constriction of peripheral arteries
4) Contraction m the wall of urinary bladder

49. Which of the following is not the action of sympathetic nervous system?

1) Slows down peristalsis

2) Erection of hair

3) Contraction in gall bladder

4) Constrict arteries and raises blood pressure

50. Rate of conduction of impulse will be faster in case of

1) Myelinated nerve fibre

2) Thicker nerve fibre

3) Non-myelinated nerve fibre

4) Both (1) and (2)

			LEVEL-3 KEY						
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
4	1	2	4	2	1	1	4	2	3
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
3	2	3	3	3	4	3	4	4	1
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
4	2	1	1	2	3	3	1	1	2
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
2	2	1	2	4	1	1	2	3	2
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
3	4	1	1	3	2	3	4	3	4