

Biology 2011

1. Which of the following is known as pond silk?

- (a) Spirogyra (b) Ulothrix
- (c) Nostoc (d) Anabaena

Ans. (a)

2. Which of the following is incorrectly matched?

- (a) Rabbit—Microlecithal, isolecithal
- (b) Frog—Mesolecithal, centrolecithal
- (c) Human—Mesolecithal, centrolecithal
- (d) Birds—Macrolecithal, telolecithal

Ans. (c)

3. In a copulating pair of Pheretima posthuma which of the two processes take place?

- (a) Internal fertilization and reciprocal fertilization
- (b) Cross fertilization and reciprocal fertilization
- (c) Reciprocal fertilization and internal fertilization
- (d) External fertilization and internal fertilization

Ans. (b)

4. A student sets up an experiment on photosynthesis as follows:

He takes soda water in a glass tumbler and add achlorophyll extracts into the contents and keeps the tumbler exposed to sunlight hoping that he has provided necessary ingredients for photosynthesis to proceed (viz., CO₂, H₂O, chlorophyll and light). What do you think what will happen after, say, a few hours of exposure of light?

- (a) Photosynthesis will take place and glucose will be produced
- (b) Photosynthesis will take place and starch will be produced which will turn the mixture turbid
- (c) Photosynthesis will not take place because CO₂ dissolved in soda water escapes into the atmosphere
- (d) Photosynthesis will not take place because intact chloroplasts are needed for the process

Ans. (d)

5. The pesticide most persistent in the soil is:

- (a) DDT (b) BHC
- (c) dieldrin (d) baygon

Ans. (c)

6. An antibody is a:

- (a) white corpuscle which attack invading bacteria
- (b) molecule that specifically Inactivate an antigen
- (c) component of the blood
- (d) secretion of mammalian erythrocyte

Ans. (b)

7. ECG is a measure of:

- (a) rate of heart beat
- (b) difference in electric potential
- (c) volume of blood pumped
- (d) ventricular contraction

Ans. (b)

8. Vitreous humor is:

- (a) colloid (b) watery fluid
- (c) mucoid connective tissue
- (d) all of the above

Ans. (c)

9. In respiration, largest amount of energy is produced in:

- (a) anaerobic respiration (b) Krebs' cycle
- (c) glycolysis (d) none of the above

Ans. (b)

10. Torpedo is commonly known as:

- (a) suckerfish (b) electric ray
- (c) globefish (d) sea horse

Ans. (b)

11. Foramen of Panizzae is found in the heart of:

- (a) rabbit (b) pigeon
- (c) crocodile (d) frog

Ans. (c)

12. Which one of the following pesticides is banned now-a-days?

- (a) DDT (b) Eldrin
- (c) Aldrin (d) Toxaphene

Ans. (a)

13. Camassial teeth are modified for:

- (a) crushing (b) tearing
- (c) grinding (d) cutting

Ans. (d)

14. In the anther wall:

- (a) tapetum lies between endothecium and middle layers
- (b) tapetum lies just inner to endothecium
- (c) middle layer is the between endo thecium and tapetum
- (d) endothecium lies to middle layer

Ans. (c)

15. Insectivorous plants grow in a soil:

- (a) deficient in iron
- (b) rich in nitrogen
- (c) deficient in nitrogen
- (d) deficient in calcium

Ans. (c)

16. Aleurone grains are rich in:

- (a) fat (b) protein
- (c) carbohydrates (d) auxins

Ans. (b)

17. Meiosis can be observed in:

- (a) tapetal cells (b) megaspores
- (c) microspores (d) spore mother cells

Ans. (d)

18. Which of the following is not an intermediate in Krebs' cycle?

- (a) Acetic acid
- (c) Succinyl coenzyme-A
- (d) Maleic acidCitric acid

Ans. (a)

19. The possible beneficial aspect of grazing animals is the

- (a) removal of wild animals and pests
- (b) eradication of weeds
- (c) removal of wild plants
- (d) addition of their excreta into the soil

Ans. (d)

20. Carrier proteins are involved in:

- (a) transport of enzymes
- (b) water transport
- (c) active transport of ions
- (d) passive transport of ions

Ans. (d)

21. McClintock is related to:

- (a) plasmids
- (b) retroposons

- (c) transposons
- (d) none of the above

Ans. (c)

22. Chloroplasts of Spirogyra have:

- (a) spiral margin
- (b) smooth or waxy margin
- (c) smooth margin
- (d) none of the above

Ans. (a)

23. Vascular bundles, in which phloem is found on both sides of xylem are called

- (a) collateral (b) bicollateral
- (c) radial (d) amphicribal

Ans. (b)

24. Aerenchyma is helpful in plants by:

- (a) providing buoyancy in hydrophytes
- (b) absorption in stilt roots
- (c) giving mechanical strength to plants
- (d) giving flexibility to plants

Ans. (a)

25. Who proposed the “Cohesion Theory” of ascent of sap?

- (a) Strasburger (b) Godlewski
- (c) Western (d) Dixon and Jolley

Ans. (d)

26. A child has single kidney since birth. This variation is:

- (a) hybridization (b) negative meristic
- (c) blastogenic (d) substantive

Ans. (b)

27. Why is CO poisonous for man?

- (a) CO affects the nerves of the lungs
- (b) CO affects the diaphragm and intercostal muscles
- (c) CO reacts with oxygen reducing percentage of O₂ in air
- (d) haemoglobin combines with CO instead O₂ and the product cannot dissociate

Ans. (d)

28. Duct of Bellini opens on:

- (a) ureter (b) renal papilla
- (c) duodenum (d) DCT

Ans. (b)

29. Humus is essential for plant growth because:

- (a) it is rich in nutrients and increases the water holding capacity of soil
- (b) it Increases aeration of soil
- (c) it increases porosity of soil
- (d) all of the above

Ans. (d)

30. Which of the following is viviparous?

- (a) Running birds (b) Whales
- (c) Bats (d) Both V and 'C'

Ans. (d)

31. In short horned cattle, genes for red (R) and white (r) coat colour occur. Cross between red (R R) and white (rr) produced (Rr) roan. This is an example of:

- (a) incomplete dominance
- (b) codominance
- (c) complementary genes
- (d) epistasis

Ans. (b)

32. Complex tissue includes:

- (a) collenchymas
- (b) apical meristems
- (c) conducting tissue
- (d) idioblast

Ans. (c)

33. Turpentine oil is obtained from:

- (a) *Pinus longifolia* (b) *Melia azadirachta*
- (c) *Eucalyptus* (d) all of the above

Ans. (a)

34. The sclerenchyma of the hypodermis in the *Pinus* needle helps in:

- (a) increasing the absorptive surface of the cell
- (b) checking transpiration
- (c) mechanical support
- (d) photosynthesis

Ans. (c)

35. Sponges are:

- (a) pelagic (b) free-swimming
- (c) planktonic (d) sessile

Ans. (d)

36. Schistosoma is a parasite found in:

- (a) testes of frog (b) liver
- (c) intestine (d) blood

Ans. (d)

37. The recent model for plasma membrane proposed by Singer and Nicolson is

- (a) molecular-lipid model
- (b) lamellar model
- (c) unit membrane model
- (d) fluid mosaic model

Ans. (d)

38. Cells obtained from cancerous tumors are known as:

- (a) hybridomas (b) myelomas
- (c) polyclonal cells (d) monoclonal cells

Ans. (b)

39. Significance of meiosis lies in:

- (a) reduction of chromosome number to one half
- (b) maintaining consistency of chromosome number during sexual reproduction
- (c) production of genetic variability
- (d) all of the above

Ans. (d)

40. Which is the connecting link between glycolysis and Krebs' cycle?

- (a) Acetyl Co-A (b) Pyruvic acid
- (c) Both 'a' and 'b' (d) None of these

Ans. (a)

41. Mark the correct sequence:

- (a) Anthesis → Meiosis → Pollination → Syngamy
- (b) Pollination → Meiosis → Anthesis → Syngamy
- (c) Anthesis → Pollination → Meiosis → Syngamy
- (d) Anthesis → Meiosis → Pollination → Syngamy

Ans. (a)

42. The relationship between the alga Microcystis and the surrounding fauna corresponds to:

- (a) ammensalism (b) parasitism
- (c) predation (d) exploitation

Ans. (a)

43. Lipofuscin granules are found in:

- (a) nerve cell (b) cardiac muscle
- (c) red muscle (d) cartilage

Ans. (a)

44. Camel in its hump stores:

- (a) water for emergency
- (b) fat for emergency
- (c) both fat and water for emergency
- (d) fat and proteins as reserve food for emergency

Ans. (b)

45. Arrangement of three successive bases in the genetic code signifies:

- (a) protein (b) nucleic acid
- (c) plasmids (d) amino acids

Ans. (d)

46. Potato is a native of:

- (a) Brazil (b) Peru
- (c) Panama (d) Mexico

Ans. (b)

47. The anthers in Solanaceae are:

- (a) monotheclus, introse
- (b) ditheclus, extrose
- (c) ditheclus, introse
- (d) monotheclus, extrose

Ans. (c)

48. In India there is decline in female population as compared to males, this is because of:

- (a) less female reach reproductive age
- (b) number of female children are born less as there is more chance of prenatal death in case of femalechild
- (c) female infanticide
- (d) all of the above

Ans. (c)

49. During embryonic development endoskeleton and muscle develop from which germinal layer?

- (a) Ectoderm (b) Endoderm
- (c) Mesoderm (d) Blastopore

Ans. (c)

50. The semen fluid consists of sperm cells and secretion from:

- (a) seminal vesical, prostate gland, cowper's gland
- (b) seminal vesicle, testis, uterus
- (c) seminal vesicle, prostate gland, testis
- (d) seminal vesicle, cowper's gland and testis

Ans. (a)

51. The peculiar feature of Marchantia plamata is:

- (a) absence of gemma cup
- (b) presence fo androgynous receptacles
- (c) absence of elaters
- (d) all of the above

Ans. (b)

52. Pneumatophores are positively:

- (a) geotropic (b) phototropic
- (c) aerotropic (d) rheotropic

Ans. (c)

53. Entry of pollen grain through micropyle is called:

- (a) porogamy (b) chalazogamy
- (c) allogamy (d) geitnogamy

Ans. (a)

54. A change in the relative abundance of an allele (the allelic frequency) within a population, over a succession of generations is called:

- (a) micro evolution
- (b) macro evolution
- (c) co-evolution
- (d) phylogenetic evolution

Ans. (a)

55. The early man whose skeleton is almost indistinguishable from that of modern man is:

- (a) Neanderthal man (b) Peking man
- (c) Homo erectus (d) Cromagnon man

Ans. (d)

56. Which of these is based on magnetic resonance?

- (a) EEG (b) CT scanning
- (c) NMR scanning (d) PET scanning

Ans. (c)

57. Broad spectrum antibiotic:

- (a) acts on all bacteria and virus
- (b) is effective in very small amount
- (c) acts on both pathogen and host
- (d) acts on a variety of pathogenic microorganisms

Ans. (d)

58. 'Tunnel vision' is associated with:

- (a) alcoholism (b) smoking
- (c) drug addiction (d) epilepsy

Ans. (a)

59. In his bacteriophage experiments, Hershey and Chase demonstrated that DNA is genetic material in

- (a) TMV
- (b) Escherichia coil
- (c) T2 bacteriophage
- (d) Diplococcus pneumonia

Ans. (c)

60. Man whose fossils were found in Shivalik hiUs:

- (a) Ramapithecus (b) Pithecanthropus
- (c) Australopithecus (d) Sinanthropus

Ans. (a)

61. Which of the following is autotrophic:

- (a) virus (b) mycoplasma
- (c) Nostoc (d) all of these

Ans. (c)

62. Germination of pollen grain on the stigma is:

- (a) in situ germination
- (b) in vitro germination
- (c) in vivo germination
- (d) autogamy

Ans. (c)

63. The function of tracheal hair is to:

- (a) pass mucus out (b) pass mucus in
- (c) pass air out (d) pass air in

Ans. (a)

64. In Echinodermata, tube feet are related with:

- (a) locomotion
- (b) excretory system
- (c) respiratory system
- (d) reproductive system

Ans. (a)

65. Autoradiography technique was used to:

- (a) trace the path of carbon in photosynthesis
- (b) establish that the oxygen evolved during photosynthesis is by photolysis of water molecule
- (c) study photorespiration in certain plants
- (d) find out the absorption maximum of chlorophyll pigments

Ans. (b)

66. Where did an epidemic bone softening disease Itai-Itai occurred first

- (a) South Korea
- (b) Japan
- (c) China
- (d) Burma

Ans. (b)

67. The trapping centre of light energy in photosystem-I is:

- (a) P- 660
- (b) P- 700
- (c) P- 680
- (d) P- 630

Ans. (b)

68. The membrane which allows passage of certain substances more readily than others is termed as:

- (a) permeable
- (b) selectively permeable
- (c) semipermeable
- (d) impermeable

Ans. (b)

69. Which combination of tissues acts together to provide the support to the hypocotyl of a seedling?

- (a) Epidermis and collenchymas
- (b) Xylem and parenchyma
- (c) Epidermis and parenchyma
- (d) Xylem and phloem fibres

Ans. (a)

70. The UV radiation from sun cause reaction that produce:

- (a) carbon monoxide
- (b) sulphur dioxide
- (c) ozone
- (d) fluorides

Ans. (c)

71. Slow muscle fibres are found in:

- (a) eye (b) leg
- (c) stomach (d) heart

Ans. (b)

72. 'Muscle pump' is:

- (a) beating of heart
- (b) squeezing effect of muscles upon veins running through them
- (c) peristaltic wave that travel along the alimentary canal
- (d) none of these

Ans. (b)

73. The magnitude of root pressure ranges between:

- (a) 2-5 atm (b) 1-5 atm
- (c) 0.1-0.2 atm (d) 4-6 atm

Ans. (b)

74. Guttation is a consequence of high:

- (a) root pressure (b) transpiration pull
- (c) photosynthesis (d) respiration

Ans. (a)

75. Which of the following part in cow's stomach is specialised for microbial digestion of plant material?

- (a) Rumen (b) Reticulum
- (c) Abomasum (d) Both 'a' and 'b'

Ans. (d)

76. Which of the following is/are not an essential micro nutrient?

- (a) Boron
- (b) Nickel and cadmium
- (c) Molybdenum
- (d) Zinc

Ans. (b)

77. Khaira disease of paddy is caused by:

- (a) viral attack (b) Mn deficiency
- (c) MLO attack (d) Zn deficiency

Ans. (d)

78. The gliding joints are important for gliding movements. One example of such a joint is between the:

- (a) zygapophyses of adjacent vertebrae
- (b) humerus and glenoid cavity
- (c) occipital condyle and odontoid process
- (d) femur and tibia fibula

Ans. (a)

79. The term hormone was given by:

- (a) Starling for insulin
- (b) Starling for secretin
- (c) Byliss for insulin
- (d) Byliss for secretin

Ans. (b)

80. Cushing's syndrome and myxedema are associated with these glands respectively:

- (a) adrenal, thyroid
- (b) thyroid, adrenal
- (c) adrenal, pituitary
- (d) parathyroid, thyroid

Ans. (a)

81. Opening and closing of flowers represent a kind of:

- (a) nastic movement
- (b) tropic movement
- (c) mutation
- (d) autonomic movement

Ans. (a)

82. 2,4-D is a/an:

- (a) insecticide (b) weedicide
- (c) nematocide (d) rodenticide

Ans. (b)

84. Hormone responsible for bolting is:

- (a) auxin (b) kinetins
- (c) ethylene (d) cytokinin

Ans. (d)

85. Functional kidney of frog tadpole is:

- (a) archiperos (b) pronephros
- (c) mesonephros (d) metanephros

Ans. (b)

86. Loop of Henle is meant for absorption of:

- (a) potassium (b) glucose
- (c) water (d) CO

Ans. (c)

87. In dark adaptation:

- (a) only cones are involved
- (b) only rods are involved
- (c) both rods and cones are involved
- (d) neither rods nor cones are involved

Ans. (b)

88. Part of ear where sound is transduced is:

- (a) tympanic membrane
- (b) malleus, incus and stapes
- (c) semicircular canal
- (d) cochlea

Ans. (d)

89. A microbial mutant requiring growth factor in addition to minimal medium is:

- (a) auxotroph (b) heterotrophy
- (c) autotroph (d) syntroph

Ans. (a)

90. When a plant has different types of leaves, the condition is known as:

- (a) heterophilly (b) anisophilly
- (c) myremecophily (d) none of the above

Ans. (a)

91. In plants glycolate metabolism takes place in:

- (a) low concentration of CO₂
- (b) high concentration of CO₂
- (c) low concentration of oxygen
- (d) absence of oxygen

Ans. (a)

92. Aristotle's lantern is a characteristic of the following class of Echinodermata:

- (a) Echinoidea (b) Ophiuroidea
- (c) Holothuroidea (d) Asteroidea

Ans. (a)

93. The largest corpuscle in mammalian blood are:

- (a) basophils (b) erythrocytes
- (c) monocytes (d) lymphocytes

Ans. (c)

94. A fatty acid not synthesised in man is:

- (a) oleic (b) linoleic
- (c) palmitoleic (d) stearic

Ans. (b)

95. Which of the following cell organelle remains enveloped by a single unit membrane?

- (a) Mitochondria
 - (b) Lysosomes
 - (c) Nucleus
 - (d) Chloroplast
- Directions for questions

Ans. (b)

Q. 96 to 100 : In each of the following questions, a statement of Assertion (A) is given followed by a corresponding statement of Reason (R) just below it. Of the statements, mark the correct answer as:

- (a) If both assertion and reason are true and reason is the correct explanation of assertion
- (b) If both assertion and reason are true but reason is not the correct explanation of assertion
- (c) If assertion is true but reason is false
- (d) If both assertion and reason are false

96. Assertion: Red algae contributes in producing coral reefs.

Reason: Some red algae secrete and deposit calcium carbonate over their walls.

Ans. (a)

97. Assertion: Insects visit flower to gather honey.

Reason: Attraction of flowers prevents the insects from damaging other parts of the plant.

Ans. (d)

98. Assertion: Coconut tree is distributed in coastal areas over a large part of the world.

Reason: Coconut fruit can float and get dispersed over thousands of kilometers before losing viability.

Ans. (b)

99. Assertion: Deficiency of sulphur causes chlorosis in plants.

Reason: Sulphur is a constituent of chlorophyll, proteins and nucleic acids.

Ans. (c)

100. Assertion: Cattle breeds can be improved by super ovulation and embryo transplantation.
Reason: Superovulation in high milk-yielding cows is induced by hormonal Injection.

Ans. (b)