

## 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., CO<sub>2</sub>, H<sub>2</sub>O, 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 CO<sub>2</sub> 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 acid Citric 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 O<sub>2</sub> in air
- (d) haemoglobin combines with CO instead O<sub>2</sub> 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) dithecus, extrose
- (c) dithecus, 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 modem 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) kinetin
- (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 CO<sub>2</sub>
- (b) high concentration of CO<sub>2</sub>
- (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)**