

Biology - 120 Model Questions

Answers are shown in Bold

1. Urey and Miller created the primitive environment in the Spark chamber and used Hydrogen, Ammonia, Methane and Water vapor to simulate the chemical origin of life. The surprising molecule they obtained after the experiment was

- A. Proteins B. Lipids **C. Amino acids** D. Polysaccharides E. Fatty acids

2. Dating of fossils refers to the determination of the age of fossils. It uses the determination of the amount of some chemicals in the rock or sediments. One of the following method seems to be the most accurate method for dating of fossils.

- A. Radio carbon method B. Uranium method C. Potassium-Argon method
D. Electron-spin resonance method E. Lead method

3. The most accepted theory of origin of life is

- A. Special creation theory B. Theory of abiogenesis **C. Oparin haldane theory**
D. Theory of spontaneous generation E. Theory of Eternity of life

4. Coacervate formed in the primitive was not considered as a primitive cell because it lacks a lipid membrane and ability of division. Which of the following is considered as a primitive cell like structure

- A. Eobiont** B. Prokaryotes C. Chemoautotroph D. Protobionts E. Cyanobacteria

5. One of the following striking example of Natural selection is

- A. Neck of giraffe B. Wing of Bat **C. Color of Peppered moth**
D. Tail of Rat E. White eye of Drosophila

6. Balanced polymorphism is the preservation of genetic variability through the selection of Heterozygote. One of the following examples show the balanced polymorphism

- A. Sickle cell anemia **B. Sickle cell trait** C. Blood groups
D. Skin colour E. Industrial melanism

7. The Crossopterygian fish Latimeria is considered as the ancestor of terrestrial vertebrates. One of the following characters helped the fish for its evolution

- A. Scales B. Fins **C. Lungs** D. Tail E. Gills

8. During the embryonic life of vertebrates, development of organs shows the evolutionary sequences. This agrees the

- A. Natural selection theory B. Theory of use and disuse C. Biogenetic law
D. Theory of Congeny E. Special creation theory

9. In which Coelenterate, Planula larva becomes Ephyra larva during development.

- a. Hydra b. **Aurelia** c. Physalia d. Sea anemone

10. The thickest layer in the heart wall is

- a. Epicardium b. Endocardium c. Pericardium d. **Myocardium**

11. The body cavity of Tapeworm is filled with

- a. Coelomic fluid b. **Parenchyma cells** c. Tissue fluid d. Colourless blood

12. The Restriction enzyme (RE) of E.Coli, Eco.R1 cut the exogenous DNA to produce staggered ends. RE will not cut the endogenous DNA of bacteria because

- a. it is not freely present in cell b. it is an inactive enzyme c. DNA of bacteria is resistant to RE
d. **some sequences of the restriction sites are methylated**

13. Read the statements carefully and select the correct answer from the choices

1. Industrial melanism exhibited by Biston betularia is an example for natural selection in action.
2. The atmosphere of primitive earth was oxidizing.
3. Fossil bird Archaeopterix is the connecting link between reptiles and mammals.
4. The most accurate method of dating a fossil is Electron spin resonance method and DNA analysis.

- a. 1 and 4 are wrong b. 1 is correct but 4 is wrong c. 2 and 3 are correct d. **1 and 4 are correct**

14. Castle's intrinsic factor is necessary for the absorption of

- a. **Cobalamine** b. Pyridoxine c. Riboflavin d. Thiamine

15. The artery supplying blood to the diaphragm is

- a. Subclavian b. Lineogastric c. **Phrenic** d. Carotid

16. Nodes of Ranvier are associated with

- a. **Myelinated neuron** b. Non myelinated neuron c. Lateral ventricle d. Synapses

17. The only antibody that crosses placenta is

- a. IgA b. IgD c. **IgG** d. IgE

18. Select the *incorrect* pair

- | | |
|--------------------|----------------------|
| a. Cyclops | Rock barnacle |
| b. Daphnia | Water flea |
| c. Streptocephalus | Fairy shrimp |
| d. Lepas | Goose barnacle |

19. Fill up the blanks using suitable combination of words from the choices given below

Sonography is the safest method to study the condition of foetus and it uses to produce images of the internal organs. The sound waves used in sonography is around and the visual record is Sex determination using sonography is banned in 1994 under prenatal diagnostic act.

- a. Audible sound – 20 Mh Z b. **Ultrasound – 20 kHz – Echogram**
c. Infrasonic sound – 2 kHz – Encephalogram d. Audible sound – 10 kHz – MR image

20. Which one of the following is a low threshold substance present in glomerular filtrate

- a. **Urea** b. Sodium c. Potassium d. Creatinine

21. The Molluscs which are considered as living fossils are

- a. Neoplina and Solon b. **Neoplina and Monoplacophora**
c. Pila and Unio d. Chiton and Teredo

22. Duct of Bellini is associated with

- a. Spleen b. Liver c. Salivary glands d. **Kidney**

23. Match the following combinations and select the correct answer from the choices

- | | |
|---------------------|-----------------------------|
| 1. Topoisomerase | 1. Kornberg enzyme |
| 2. Molecular glue | 2. Bacterial DNA polymerase |
| 3. DNA gyrase | 3. Ligase |
| 4. DNA polymerase I | 4. DNA strand separation |

- a. **1-4, 2-3, 3-2, 4-1** b. 1-3, 2-2, 3-1, 4-4
c. 1-1, 2-3, 3-4, 4-2 d. 1-4, 2-3, 3-1, 4-3

24. The volume of air remains in the lungs after a forceful expiration is

- a. Total lung volume b. Vital capacity c. Tidal volume d. **Residual volume**

25. Green glands of Prawn are located at the base of

- a. **Antennae** b. Thelycum c. Uropod d. Antennules

26. Paneth cells are found in

- a. Hepatic lobules b. Pancreatic islets c. **Crypts of Liberkuhn** d. Payers patches

27. Which one is a *wrong* statement

- a. Dolly was created through reproductive cloning using Udder cells
b. Apoptosis is the Programed cell death
c. **Chorionic Villi Sampling (CVS) is a post natal diagnosis**
d. Shot gum approach is used in making genomic library

28. Total number of oxygen molecules that can binds to a single haemoglobin molecule under normal partial pressure is

- a. 8 b. 6 c. 1 **d. 4**

29. Leptocorisa is a major pest of

- a. Paddy** b. Coconut c. Wheat d. Sugarcane

30. Pectoralis major of Flying birds is

- a. Valve in the stomach b. Cavity in the bones c. Reproductive gland **d. Flight muscle**

31. Normal cardiac cycle is completed in

- a. 0.4 seconds **b. 0.88 seconds** c. 0.18 seconds d. 0. 8 seconds

32. Which one of the following enzymes is obtained from Thermophilus aquaticus bacterium which is heat stable and used in PCR at high temperature .

- a. DNA polymerase III B. Endonuclease **c. Taq polymerase** d. DNA gyrase

33. Compare the list of Biomedical techniques given in column A with the functions given in column B and select the correct matching combinations from the choices given below

Column A

1. Digital Substraction Angiography
2. Magnetic Resonance Imaging
3. Posirton Emission Tomography
4. Charge Coupled Device

Column B

1. detect presence of water in organs
2. detect blocks in the arteries
3. detect defects in the stomach
4. detect tissue damage in the brain

- a. 1-2-3-4 b. 4-1-2-3 **c. 2-1-4-3** d. 2-1-4-3

34. Sella tursica is the cavity of skull in which is lodged

- a. Eye b. Ear c. Larcymal gland **d. Pituitary gland**

35. Plasma clearance will be maximum for

- a. Sodium** b. Phosphate c. Bicarbonate d. Calcium

36. Which of the following factors will not allow Hardy- Weinberg principle to operate

- a. Inbreeding **b. Mutation** c. Gene pool d. Selection

37. Cri-du-chat syndrome in man develops due to

- a. Trisomy in chromosome 13** b. deletion in the short arm of 5th chromosome
c. deletion in the short arm of chromosome 15 d. deletion in chromosome 22

38. Vitamin K plays an important role in

- a. preventing thrombosis
- b. **biosynthesis of Prothrombin**
- c. regulating bile secretion
- d. regulating ATP synthesis

39. Vitelline membrane of human ovum is

- a. middle, thin, transparent and non cellular
- b. **inner, thin and transparent**
- c. outer, thick and transparent
- d. inner, thin and translucent

40. The source of illumination in Fluorescent microscope is

- a. Electron beam
- b. Light rays
- c. **UV rays**
- d. Infrared rays

41. Which one of the following statements is *true* about Prostaglandins

- a. Prostaglandin increases platelet aggregation
- b. Prostaglandin is formed of proteins
- c. **Prostaglandin F2 alpha causes contraction of uterus**
- d. Prostaglandin E2 alpha is present in amniotic fluid.

42. Ciliary muscles are present in

- a. Joints of two bones
- b. **Joint of Sclera and Iris**
- c. Inter auricular septum of heart
- d. Inter ventricular septum of heart.

43. The blood of Cockroach has no respiratory value. This shows that

- a. Cockroach does not respire
- b. Respiration is anaerobic
- c. **Oxygen directly goes into tissues**
- d. Oxygen is not utilized in cell respiration

44. Avian flu is a dangerous form of disease of birds including poultry. Its infection takes place

through the nasal and oral secretions and affect the respiratory system. What is its causative agent

- a. Bacteria
- b. TM virus
- c. **H1 virus**
- d. Diplococcus bacteria

45. Heparin is an anticoagulant produced from liver. Its function is to

- a. block the conversion of Fibrinogen to Fibrin
- b. **block the conversion of Prothrombin to Thrombin**
- c. hemolyse RBC
- d. inhibits the action of calcium ions

46. Pribnow box contains the nucleotide sequence

- a. **5' TAA TTA 3'**
- b. 3' TAA TTA 5'
- c. 5' GCC CCG 3'
- d. 5' AAT TTA 3'

47. Spliceosomes are involved in

- a. cutting of DNA in genetic engineering
- b. **splitting of Pre mRNA**
- c. formation of Nucleosomes
- d. Prokaryotic DNA synthesis

48. Benzodiazepine , the common muscle relaxant helps to bind the receptor proteins with
- a. **GABA** b. Acetylcholine c. Dopamine d. Glycine
49. DNA Finger printing requires only a minute quantity of DNA sample such as WBC of blood stain because
- a. Large quantity of DNA is available in WBC b. DNA contains nitrogen bases
c. **DNA can be amplified through PCR** d. DNA determines the heredity.
50. One of the following structure of Cockroach is responsible for water conservation
- a. Spiracles b. Hepatic caeca **c. Malpighian tubules** d. short midgut
51. One of the following sets of animals is treated as endangered
- a. Black buck – Lion – Rhinos b. Musk deer – Lion – Rhinos
c. Black buck – Spotted deer – Bison **d. Snow leopard – Musk deer – Great Indian bustard**
52. In Man, I^A allele produce A antigen and I^B allele produce B antigen. i allele is incapable of producing any antigen. In which of the following person, the genotype is homozygous for the alleles
- a. A group b. B group **c. O group** d. AB group
53. Phospho diester bonds present in DNA helix determines the 3;-5' polarity of strands while Hydrogen bonds
- a. **stabilize DNA structure** b. de stabilize DNA structure
c. makes the strands antiparallel d. makes the turns of helix
54. Carbonic anhydrase, the fastest enzyme in the living system is present in
- a. Pancreatic juice b. Hepatic cells **c. RBC** d. Neuroglia
55. Select the mismatching pair
- a. Delta wave – Deep sleep **b. Beta wave – Eyes closed**
c. Alpha wave – REM sleep d. Theta wave – Normal sleep
56. Presence of 'Negri bodies' in the brain cells indicate the infection of
- a. Trypanosoma b. Plasmodium c. Pasteurella **d. Rabies**
57. Mammals possess Brown fat beneath the skin which helps to
- a. increase heat loss b. insulate the body **c. produce metabolic heat** d. store water
58. Hippocampus, Red nucleus and Amygdala are the parts of
- a. Limbic system** b. Hypothalamus c. Cerebellum d. Medulla
59. Smallest cranial nerve of man is
- a. Trigeminal **b. Pathetic trochlear** c. Ocular d. Auditory

60. Excessive alcohol consumption leads to the disease Polyneuritis because
- a. alcohol destroy liver cells
 - b. alcohol causes liver inflammation
 - c. **alcohol reduce Vit.B utilization**
 - d. alcohol reduce iron absorption
61. ELISA is used to detect HIV but the confirmation of HIV infection is done through
- a. Southern blotting
 - b. **Western blotting**
 - c. Eastern blotting
 - d. DNA finger printing
62. Compact bone is characterized by the presence of
- a. **Haversian system and Yellow bone marrow**
 - b. Haversian system and Red bone marrow
 - c. Haversian system without bone marrow
 - d. Haversian system with red and yellow bone marrow
63. One of the following cell can stimulate secondary immune response in the body followed by an infection
- a. T-cell
 - b. B-cell
 - c. **Memory cell**
 - d. Stem cell
64. Which one group is considered as the “Stem Reptile” which disappeared during Triassic period
- a. Rhyncocephalia
 - b. **Cotylosauria**
 - c. Sqamata
 - d. Chelonia
65. Stick insect and Leaf insects have adaptation to resemble the twigs and leaves of plants to escape from enemies. This is known as
- a. Homology
 - b. Analogy
 - c. Camouflage
 - d. **Mimicry**
66. In enzyme action, sometimes a substance blocks the active sites and inhibits the action of enzymes. This is
- a. **Allosteric inhibition**
 - b. Feed back inhibition
 - c. Competitive inhibition
 - d. Non competitive inhibition
67. During an experiment, Cyanide was accidentally mixed with a cell culture. Which of the following is most likely to occur in the plasma membrane of the cells
- a. Passive transport stops
 - b. **Active transport stops**
 - c. Diffusion stops
 - d. Phospholipids destroys
68. Due to continuous intake of Antibiotics, many strains of bacteria becomes resistant to antibiotics. This is because of
- a. **Bacterial transformation**
 - b. Bacterial transduction
 - c. Conjugation
 - d. Mutation