

W-134**Ph.D. Entrance Examination, 2024****BIOTECHNOLOGY****Maximum Marks : 50****Note :** Each question carrying 2 marks.**Q. 1.** Hepatitis is an example of :

- (a) Recombinant vaccine
- (b) Toxoids vaccine
- (c) Killed vaccine
- (d) Subunit vaccine

Q. 2. Acute inflammation characteristically involves :

- (a) Influx of neutrophils
- (b) Influx of mast cells
- (c) Influx of macrophages
- (d) Capillary endothelial cell enlargement

Q. 3. The main force in membrane releasing of ruptured bio membrane in aqueous environment is :

- (a) Covalent forces between membrane lipids
- (b) Hydrophobic forces between membrane lipids
- (c) Forces between protein and lipids
- (d) Ionic interactions between membrane lipids

Q. 4. Among the following which activity is absent in bacterial DNA Pol I :

- (a) 5' → 3' polymerase activity
- (b) 3' → 5' polymerase activity
- (c) 5' → 3' exonuclease activity
- (d) 3' → 5' exonuclease activity

Q. 5. Promoter for RNA polymerase III are located at :

- (a) Within transcribed sequence
- (b) –35 to –10
- (c) +1 to +10
- (d) More than 100 bp upstream

Q. 6. Influenza virus enters into host cell by :

- (a) Exocytosis
- (b) Endocytosis
- (c) Transcytosis
- (d) Cell fusion

(3)

- Q. 7.** Tumor cells were isolated from a breast cancer patient. These cells were injected into nude mice and they were divided into four groups. Group 1 received EGF receptor-conjugated with methotrexate, Group 2 received transferrin receptor conjugated with methotrexate, Group 3 received mannose receptor conjugated with methotrexate, Group 4 received same amount of the free drug. In which of the following cases tumorigenic index would be minimum ?
- (a) Group 4
 - (b) Group 1
 - (c) Group 2
 - (d) Group 3
- Q. 8.** Which of the following is a component of MAP kinase pathways :
- (a) Protein kinase B
 - (b) ERK
 - (c) IP3
 - (d) JAK kinase

W-134

P.T.O.

(4)

- Q. 9.** Which of the following diseases or pathogens have been completely eradicated from India ?
- (a) Sleeping sickness, yellow fever
 - (b) Small pox, polio
 - (c) Yellow fever, plague
 - (d) Small pox, guinea worm
- Q. 10.** Which of the best technique to determine the topology of transmembrane protein :
- (a) Confocal microscope
 - (b) Scanning electron microscope
 - (c) Transmission electron microscope
 - (d) Freeze-fracture electron microscope
- Q. 11.** Which is serine protease activity site :
- (a) Glu-AsP-met
 - (b) Ser-Ser-His
 - (c) His-AsP-Ser
 - (d) His-AsP-Glu
- Q. 12.** A discrete portion of a protein assumed to fold independently of the rest of the protein and passing its own function :
- (a) Fold

W-134

(5)

- (b) Motif
- (c) Helix
- (d) Domain

Q. 13. In which of the following fermenter impellers are replaced by the constant supply of gas :

- (a) Tower fermenter
- (b) Hollow fermenter
- (c) Airlift fermenter
- (d) Bubble column fermenter

Q. 14. Chlorella SP. uses _____ for SCP production :

- (a) CO₂ + Sunlight
- (b) N₂ + Sunlight
- (c) O₂ + Sunlight
- (d) None of the above

Q. 15. What factor does not affect oxygen transfer rate ?

- (a) Antifoams
- (b) pH
- (c) Temperature
- (d) Agitation

W-134

P.T.O.

(6)

Q. 16. Naive B cell express which of the following antibody ?

- (a) IgM and IgD
- (b) IgM and IgA
- (c) IgM and IgG
- (d) IgM and IgE

Q. 17. SDS binds to which domain of protein ?

- (a) Negative charge AA
- (b) Hydrophobic side chain
- (c) Positively charged AA
- (d) All of the above

Q. 18. Which programme is used for phylogenetic analysis ?

- (a) Chi square test
- (b) Null hypothesis
- (c) Bootstrapping
- (d) Probability

Q. 19. Which is clean gene technology ?

- (a) Marker-free transgenic plants
- (b) Removing markers after use
- (c) Conventional breeding without markers
- (d) All of the above

W-134

(7)

Q. 20. The source of sucrose in growth media required for industrial fermentation is :

- (a) Corn sugar
- (b) Milk whey
- (c) Sugar beet
- (d) Soybean

Q. 21. α amylase is industrially produced by :

- (a) Bacillus licheniformis
- (b) Aspergillus
- (c) Rhizopus
- (d) Clostridium acetobutylicum

Q. 22. What is the cause of AROMA in rice plant ?

- (a) 2 vinyl 1 pyrroline
- (b) 3 acetyl 1 pyrroline
- (c) 2 acetyl 1 pyrroline
- (d) 2 acetyl 1 pyrimidine

Q. 23. Extraction achieves :

- (a) Separation of product
- (b) Concentration of product
- (c) Both
- (d) None of these

W-134

P.T.O.

(8)

Q. 24. Polyploidy is induced by :

- (a) Auxin
- (b) Ornithine
- (c) Colchicine
- (d) None

Q. 25. What is sequence of enzyme used in RT-PCR :

- (a) DNA dependent RNA pol followed by DNA dependent DNA pol
 - (b) RNA dependent DNA pol followed by DNA dependent DNA pol
 - (c) RNA dependent DNA pol followed by RNA dependent DNA pol
 - (d) None of the above
-

W-134