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Ph.D. Entrance Examination, 2024

BOTANY

Maximum Marks : 50

Note : Each question carrying 2 marks.

Q. 1. The true fungi differ from slime moulds in :

- (a) Lacking plasmodial stage and phagotrophic nutrition
- (b) Lacking sexual reproduction
- (c) Lacking chlorophyll
- (d) Having green pigments

Q. 2. The classification of fungi mainly based on :

- (a) Structure of mycelium
- (b) Sexual reproductive stage
- (c) Asexual stage
- (d) Structure of mycelium and asexual stage

Q. 3. A stage in the replication of virus during which the virus particle can not be detected in the infected cell :

- (a) Absorption stage
- (b) Maturation stage
- (c) Lysis
- (d) Eclipse stage

Q. 4. The site where the protein for protein coat of viruses are synthesized :

- (a) Virus membrane
- (b) Viral RNA
- (c) Host Ribosomes
- (d) Host mitochondria

Q. 5. We often find high temperature in manure pits this is because of :

- (a) Bacterial activity
- (b) Thermogenesis
- (c) Land is good absorber of heat from sun
- (d) Material buried underground

(3)

Q. 6. The Irish famine of potato occurred in year :

- (a) 1845
- (b) 1855
- (c) 1745
- (d) 1876

Q. 7. Rice blast disease is caused by :

- (a) *Allomyces* spp.
- (b) *Rhizoctonia* spp.
- (c) *Magnaporthe* spp.
- (d) *Fusarium* spp.

Q. 8. Origin and evolution of algae is best displayed

by :

- (a) Green algae
- (b) Blue green algae
- (c) Brown algae
- (d) Red algae

Q. 9. Oedogonium cap cell linings are made up of :

- (a) Proteins

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(b) Cellulose

(c) Hemicellulose

(d) Fats

Q. 10. Most of the pteridophytes are :

(a) Xerophytic

(b) Epiphytic

(c) Aquatic

(d) Terrestrial

Q. 11. In Gymnosperms, the endosperm develops :

(a) After fertilization

(b) Before fertilization

(c) At the time of fertilization

(d) During embryo formation

Q. 12. Rosette habit is characteristic of :

(a) *Marchantia*

(b) *Plagiochasma*

(c) *Riccia*

(d) *Anthoceros*

(5)

Q. 13. Apical sterile part of each Cycas microsporophyll

is :

- (a) Operculum
- (b) Calyptra
- (c) Coma
- (d) Apophysis

Q. 14. "Coal balls" usually contains :

- (a) Magnesium or calcium carbonates
- (b) Bicarbonates of calcium
- (c) Bicarbonates of magnesium
- (d) None of the above

Q. 15. Which of the following is an example of homology and similarity tool ?

- (a) RasMol
- (b) BLAST
- (c) EMBOSS
- (d) PROSPECT

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Q. 16. The first molecular biology server Expasy was launched in year :

- (a) 1992
- (b) 1994
- (c) 1991
- (d) 1993

Q. 17. Deposition of cDNA into the inert structure is called :

- (a) DNA probe
- (b) DNA polymerase
- (c) DNA microarray
- (d) DNA fingerprints

Q. 18. NCBI stands for :

- (a) Neuro center for biotechnological information
- (b) National center for biotechnological information
- (c) Natals center for biotechnological information
- (d) None of the above

Q. 19. Unusual bases are found in :

- (a) t-RNA
- (b) mRNA

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- (c) DNA
- (d) rRNA

Q. 20. β -galactosidase enzyme is used for the study of :

- (a) Inducible system
- (b) Repressible system
- (c) Operon model
- (d) Lac-operon

Q. 21. Xenia represents the effect of pollen genotype on :

- (a) Fruit
- (b) Embryo
- (c) Endosperm
- (d) Ovary

Q. 22. First step in oxidative decarboxylation is :

- (a) Oxidation of pyruvate
- (b) Reduction of pyruvate
- (c) Both of the above
- (d) Decarboxylation of pyruvate

Q. 23. Complete oxidation of one molecule of acetyl Co-A results in :

- (a) 38 ATP

(8)

- (b) 12 ATP
- (c) 36 ATP
- (d) 15 ATP

Q. 24. Sister chromatids separate during which of the following steps ?

- (I) Mitotic anaphase
- (II) Anaphase-I
- (III) Anaphase-II
- (a) I, II
- (b) II, III
- (c) I, III
- (d) I, II, III

Q. 25. The phrase "stress hormone" refers to :

- (a) ABA
- (b) Cytokinins
- (c) Gibberlin
- (d) Mercaptal

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