QUAID-I-AZAM UNIVERSITY

Department of Zoology

Faculty of Biological Sciences

MPHIL ENTRY TEST

Maximum Time: 1 Hour **Total Marks: 40**

Name: ----------

Part A

Q.No.1: ENCIRCLE the correct answers from any of the given choices (35 × 1= 35)

1. Meaning of word hormone refers:

a) To excite

b) To balance

c) To coordinate

d) To inhibit

2. Hormone concentration can be determined by:

a) Immunoassays

b) Immunocytochemistry

c.) Western blotting

d) All of above

3. Steroid hormones act through:

a) G protein coupled receptors

b) Single trans membrane receptor

c) Intracellular receptors

d) Ion channels

4. Reverse transcription occurs in the following virus when it replicates:

a) Hepatitis C virus

b) HIV

c) Influenza virus

d) Rabies virus

5. The most common enzyme used in PCR is:

a) DNA Polymerase I

b) DNA Polymerase II

c) RNA Polymerase

d) Taq DNA Polymerase

6. In all eukaryotic cells, a steady stream of vesicles buds from the Trans Golgi network and fuses with the plasma membrane in the process of ----------.

a) Endocytosis

b) Constitutive exocytosis

c) Regulated exocytosis

d) Transcytosis

7. The inner membrane is rich in one type of phospholipid, called ----------which makes this membrane impermeable to a variety of ions and small molecules.

a) Cardiolipin

b) Dolichol

c) Cholesterol

d) Transferrin

8. GnRH receptor is----------,7-transmembrane G protein Coupled Receptor involve in synthesis & release of LH and FSH.

a) 60kDa

b) 80kDa

c) 100kDa

d) 120kDa

9. ----------; is a condition where there is hyperfunction of gonads, it can manifest asprecious puberty and caused by abnormal high level of testosterone and estrogen.

a) PCOD
b) Hypergonadism
c) Hypogonadism
d) Infertility

10. Most lakes and ponds form as a result of ----------activity.

a) Tectonic
b) Glacial
c) Volcanic
d) None of above

11. Largest lake in Pakistan is the ----------.

a) Lulusar Lake
b) Mahudhand Lake
c) Attabad Lake
d) Manchar Lake

12. ---------- is the indigenous species of Pakistan

a) Hypophthalmichthys molitrix
b) Cyprinus carpio
c) Cirrhinus mrigala
d) Ctenopharyngodon idella

13. Which one of these retinal interneurons function as the output cells of the retina with their axons joining to form the optic nerve of each eye?

a) Ganglion cells
b) Bipolar cells
c) Horizontal cells
d) Amarcine cells

14. Air flow in healthy subjects is determined by

a) The radius of the conducting airways
b) Transmural pressure gradient across lung wall
c) Pressure gradient between the alveoli and atmosphere
d) Intra alveolar cohesive forces

15. A small group of flukes that are primarily internal parasites of molluscs are the_____

a) Subclass Aspidogastrea.
b) Subclass Digenea.
c) Class Monogenea.
d) Class Cestoidea.

16. Which one of the following groups does NOT belong to the Class Arachnida?

a) Mites
b) Ticks
c) Scorpions
d) Beetles

17. ---------- cilia play an important role in driving water through the mental cavity in mollusks.

a) Frontal cilia
b) Lateral cilia
c) Dorsal cilia
d) Ventral cilia

18.Thickness of epicuticle is only about ----------% of total exoskeleton thickness in Arthropods.

a) 1
b) 3
c) 4
d) 5

19. Gregor Mendel did not encounter linkage in his studies because: _____

a) environmental variation can mask the effects of linkage.

b) linkage does not occur in plants.

c) most of the genes he studied were not close together on the same chromosomes.

d) he chose traits that all were on different chromosomes.

20 Which of the following statements about interference is true? _____

a) It occurs in plants but not animals.

b) It is equal to the coefficient of coincidence.

c) It is likely due to physical constraints on the formation of chiasmata.

d) It is a quantification of the number of crossover events within a chromosome region.

21 ----------can serve as chemical catalyst in the cell.

a) protein

b) An RNA

c) Both a & b

d) None of the above

22. A periodicity of 3.4 Å is ----------

a) Distance between two bases in a helical turn of DNA

b) 10 bases per helical turn of DNA

c) Z form of DNA

d) Base tilt normal to the helix axis

23. Bond between two nucleotides of nucleic acid is ----------

a) Glycosyl bond

b) Phosphodiester bond

c) Hydrogen bond

d) Peptide bond

24. enzyme responsible for synthesis of Mrna is ----------

a) DNA dependent RNA polymerase

b) RNA dependent DNA polymerase

c) DNA dependent DNA polymerase

d) Reverse transcriptase

25. The term genes in pieces refer to----------

a) A group of genes having same promoter that is upstream of gene complex.

b) A group of genes having same promoter that is downstream of genes.

c) Eukaryotic genes with introns and exons

d) Pseudogenes

26. splicing of introns involve----------

a) Trans-esterification reaction

b) Tautomerization

c) Polyadenylation

d) RNase P

27. Single nucleotide alterations result in mutated proteins with changes in a single amino acid showing that genetic code is----------

a) Non overlapping

b) Degenerate

c) Universal

d) Wobble

28. lac-repressor cause repression of lac-operon when----------

a) Lactose is absent

b) Lactose is converted to allolactose

c) It binds to allolactose

d) Lactose is present

29. Mass spectrometry is used for

a) Identification of peptides

b) Detect amount of protein

c) Detect interaction of light with protein

30. Post translational modifications do not occur in

a) Yeast cell

b) Plant cell
c) Bacterial cell
d) None of the above

31. Glycolysis takes place in:
a. Chloroplast b. Peroxisomes c. Mitochondrial matrix d. Cytoplasm

32. If the pump moves both solutes in the same direction across the membrane, this type of transport is called:
a. transcytosis b.Antiport c.Symport d. Uniport

33. The organelle concerned with H2O2 metabolism is:
a. lysosomes b. Peroxisomes c. both a and b d.Ribosomes

34. For each okazaki fragment:
a. There is same polymerase b.There is separate primer c.There is 5'-3' synthesis d.All of the above

35. Production of DNA repair proteins in response to chemical/radiation induced DNA damage is an example of
a.Genetic repression b.Gene induction c.Constitutive gene expression d.Heat shock response

Part B

Short Questions **(5X1=5)**

1. What is principle of agarose gel electrophoresis?

_____

_____

2. Write two functions of membrane proteins.

_____

_____

3. Enlist stages in the life cycle of a cockroach.

_____

_____

4. What are paracrine glands.

_____

_____

5. Describe role of calcium in synaptic transmission.

_____

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