

RAMAKRISHNA MISSION VIVEKANANDA CENTENARY COLLEGE, RAHARA, KOLKATA
Undergraduate Admission Test 2022: Zoology Honours

Full Marks : 150

Time : 2hours

1. The process of releasing of spermatozoa from the sertoli cells is called as
 - A. spermatogenesis
 - B. spermiogenesis
 - C. spermiation
 - D. none of the above
2. Connecting link between non-chordates and chordates is
 - A. *Peripatus*
 - B. *Balanoglossus*
 - C. *Sphenodon*
 - D. None of above
3. Which one of the following bacteria is resistant to penicillin as it lacks a cell wall?
 - A. Spirochetes
 - B. Cyanobacteria
 - C. Mycoplasmas
 - D. Bdellovibrios
4. The technique of insertion of a desired gene into DNA plasmid vector is called
 - A. gene splicing
 - B. gene dressing
 - C. gene cloning
 - D. gene drafting
5. Which enzyme is responsible for the synthesis of transfer RNA
 - A. RNA replicase
 - B. RNA polymerase
 - C. Ribozyme
 - D. tRNA synthetase
6. Placing the chest piece of stethoscope on the patient's chest a doctor heard 'Murmur ' sound instead of Lup - Dup sound . What conclusion he draws
 - A. May be some defect in the heart vulve
 - B. Viscosity of blood is highly increased
 - C. Some defect in the SA node
 - D. None of the above.
7. Corona Virus contains
 - A. Double stranded DNA (ds DNA)
 - B. ssRNA; Template for mRNA synthesis
 - C. Single stranded RNA (Serves as m RNA)
 - D. ssRNA ; Template for DNA synthesis
8. Which stage of malarial parasite is infective to its primary host ?
 - A. Merozoite
 - B. Trophozoite
 - C. Schizont
 - D. Sporozoite

9. An attached ear lobe in Man is a
- Dominant trait
 - Recessive trait
 - Not a genetic marker
 - None of the above
10. Statement P: A coenzyme or metal ion that is very tightly bound to enzyme protein is called prosthetic group.
- Statement Q: A complete catalytically active enzyme together with its bound prosthetic group is called apoenzyme.
- Both Statement P and Q are true.
 - Both Statement P and Q are false.
 - Statement P is true but Statement Q is false.
 - Statement P is false but Statement Q is true.
11. Which one of the following makes use of RNA as a template to synthesize DNA ?
- RNA polymerase
 - DNA polymerase
 - Reverse transcriptase
 - DNA-dependent RNA polymerase
12. Genetic drift is change of :
- Gene frequency in the same generation
 - Appearance of recessive genes
 - Gene frequency from one generation to the next
 - None of the above
13. Which of the following molecules can be utilized for establishing early evolutionary process?
- Nuclear DNA
 - Mitochondrial DNA
 - Ribosomal RNA
 - Chloroplast DNA
14. Transport of oxygen and carbon dioxide in blood is
- Carbon dioxide in bound form and oxygen in dissolved form
 - Oxygen in bound form and carbon dioxide in dissolved form
 - Both in bound form
 - Both in dissolved form
15. If neurons are like electrical wire, then the function of myelin sheaths would be like,
- Wire
 - Fuse
 - Conductor
 - Insulator
16. See the following image. In which of the following country you can see the highest diversity of these organisms?



- A. Madagascar
B. Malaysia
C. Maldives
D. Australia
17. To focus image the accommodation in lens of eye is mainly at
A. Due to change in surface of front of lens
B. Due to change in surface of back of lens
C. Due to sphincter muscles which vary the curvature of both the surface of lens
D. Due to type of ciliary muscles and fibers
18. Which of the following are abiotic factors?
A. Temperature, rainfall, pH, parasites
B. Temperature, rainfall, pH, soil
C. Temperature, rainfall, pathogens
D. Temperature, rainfall, pH, viruses
19. Among the following which group of organisms are not uricotelic?
A. Birds
B. Insects
C. Mammals
D. Reptiles
20. If organism with genotype AaBb is self-fertilised and where A and B are not linked, then the probability of getting AABB genotype will be
A. $1/2$
B. $1/4$
C. $1/8$
D. $1/16$
21. Dragonfly play a significant role in controlling the insect population, specially mosquitoes and agricultural pests, they have,
A. Terrestrial life cycle
B. Aquatic life cycle
C. Semi-aquatic life cycle
D. Marine life cycle
22. The kangaroo is a hopping Australian marsupial and the okapi is a stripe-trousered giraffe-ish creature from Africa, but both are foregut fermenters. Thus, they have broadly similarity in
A. Their teeth structure
B. Their structure of gut
C. Their gut microbiota
D. Their habitat
23. Which of the following statements are correct?
P. Down syndrome is due to extra 21st chromosome.
Q. It occurs due to nondisjunction of chromosomes.
R. It has chromosome complement of $2n+1$.
S. Monosomics are $2n-1$.
A. P, Q
B. R, S
C. P, Q, R
D. P, Q, R, S

24. What is a genomic library?
- a collection of recombinant molecules with inserts that contain all of the genes of an organism
 - a collection of recombinant molecules with inserts that contain all of an organism's genome
 - a collection of recombinant molecules that express all of the genes of an organism
 - a collection of recombinant molecules that have been sequenced
25. Which of the following are the functions of hypothalamus?
- control of the ANS
 - production of hormones
 - regulation of emotional and behavioural patterns
 - regulation of eating and drinking
 - control of body temperature
 - regulation of biological clock
- 1 2 5 6
 - 1 2 3 5 6
 - 1 3 4 6
 - 1 2 3 4 5 6
26. How many different types of Phenotypes are produced in a Tri Hybrid cross?
- 8.
 - 4.
 - 9.
 - 16
27. Suppose you travel to Darjeeling, what change will be seen in your RBC
- increase in number
 - decrease in number
 - increase in size
 - no change
28. In which of the blood vessels, thrombosis is associated with myocardial infraction?
- carotid artery
 - coronary artery
 - aorta
 - all of the above
29. In which part of India you are likely to get the corals
- Chilka
 - Lakshadweep
 - Diu
 - Silvassa
30. Source of energy in brain is
- BRAIN LIPID
 - CSF
 - GALACTOSE
 - GLUCOSE

31. Which of the following are important hormones during pregnancy?
- estrogen
 - HCG
 - progesterone
 - all the above
32. The important physiological barrier outside the cell on which exoskeleton is secreted and which regulates binding of signal molecules to surfaces such as other cells is—
- Proteoglycan
 - Integrin
 - Glycocalyx
 - Cell adhesion molecules (CAM)
33. Myonemes associated with spasmin is a contractile protein present in the locomotory organ of cilia requires _____ for contraction.
- ATP
 - Mg ++
 - Na +
 - Ca ++
34. Deep burrowing in annelids was made possible due to the presence of –
- Annulae
 - Prostomium
 - Hydrostatic skeleton
 - Moist skin
35. The prime difference between collar cells and cnidoblast cells are –
- Presence or absence of flagella
 - Presence or absence of cnidocil
 - Presence or absence of microvilli
 - All of the above
36. Corren's in a variegated variety of four 'O' clock plant- *Mirabilis jalapa* found that some branches of the plant are with normal green leaves, some branches with all white leaves and some branches with leaves having mosaic green and white patches. The probable reason behind this observation is—
- Non-Mendelian inheritance
 - Maternal inheritance
 - Cytoplasmic inheritance
 - All of these
37. Non disjunction of chromosomes leads to
- Patau's syndrome
 - Marfan's syndrome
 - Klinefelter's syndrome
 - Cri-du Chat syndrome
38. Which one of the following is correctly matched
- Kalaazar—*Plasmodium falciparum*
 - Malaria—*Leishmania donovani*
 - Sleeping sickness—*Entamoeba histolytica*
 - Filariasis --- *Wuchereria bancrofti*

39. In smooth muscles, during contraction, Ca^{++} combines with
- Troponin-C
 - Calmodulin
 - Calsequestrin
 - Calbindin
40. Allopatric speciation occurs in?
- A segment of some population
 - Geographically isolated population
 - Coming together of two isolated populations
 - A segment of species in which mutation has occurred
41. The population of species is less than 250 matured individuals in the wild population. The species is under which of the following IUCN status-
- Vulnerable
 - Extinct in wild
 - Critically endangered
 - Endangered
42. During glycolysis, a molecule of glucose ultimately breaks into pyruvate and energy. Number of ATP derived from this process is_____.
- 2
 - 28
 - 32
 - 10
43. Which of the followings is the right orientation of taxonomic hierarchy?
- Kingdom -> Family -> Order -> Species
 - Phylum -> Class -> Order -> Genus
 - Family -> Class -> Genus -> Species
 - Kingdom -> Family -> Class -> Species
44. Which of the following options can define mRNA splicing?
- Removal of snRNA
 - Joining of poly-A
 - Removal of introns from exons
 - Capping of hn-RNA
45. 'Telomerase' is an enzyme which is a –
- Ribonucleoprotein
 - Repetitive DNA
 - RNA
 - Simple Protein
46. Male cockroach differs from female one in having –
- Antennae
 - Labrum
 - Mandible
 - Anal styles

47. What is the correct sequence of reproductive events in humans?
- A. Gametogenesis > Gestation > Insemination > Fertilization > Implantation > Parturition
 - B. Gametogenesis > Insemination > Fertilization > Implantation > Gestation > Parturition
 - C. Gametogenesis > Implantation > Gestation > Insemination > Fertilization > Parturition
 - D. Gametogenesis > Gestation > Implantation > Insemination > Fertilization > Parturition
48. Which of the following situation might create a population bottleneck?
- A. A small number of animals migrating from one geographic location to another, leaving behind the rest of the population
 - B. Overhunting or overfishing of particular species over a short period of time
 - C. Natural disaster that leave behind a fraction of a population
 - D. All of above statements describe situations that may lead to a 'population bottleneck'
49. If a man of blood group AB marries a woman of blood group A whose father was of blood group O, to what different blood groups can be expected for their children?
- A. A, AB, O, B
 - B. A, B, AB
 - C. AB, O
 - D. A, B, O
50. 32. The primary problem faced by an aquatic vertebrate is-
- A. Rotation of the body about its centre of mass
 - B. Drag force experienced during movement
 - C. Weight of the body due to gravity forces the body to sink
 - D. Skeletal system is not advanced type for movement and locomotion
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