

Seat No.	
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**ENT - 31**

**Total No. of Pages : 18**

**P. G. Re-Entrance Examination, 2025**

**M. Sc. ZOOLOGY**

**Subject Code: 58719**

**Day and Date : Thursday, 10-07-2024**

**Total Marks : 100**

**Time : 01.00 p.m. to 02.30 p.m.**

**Instructions :**

- 1) All questions are compulsory
- 2) Each question carries 1 mark.
- 3) Answers should be marked in the given OMR answer sheet by darkening the appropriate option.
- 4) Follow the instructions given on OMR sheet.
- 5) Rough work shall be done on the sheet provided at the end of question paper.

1. Polyps and medusa are found only in the phylum .....

- |             |               |
|-------------|---------------|
| a. porifera | b. cnidaria   |
| c. protista | d. helminthes |

2. Metameric segmentation found in .....

- |             |              |
|-------------|--------------|
| a. annelids | b. molluses  |
| c. protists | d. poriferan |

3. Presence of canal system is characteristic feature of phylum .....

- |                 |                  |
|-----------------|------------------|
| a. Protozoa     | b. Porifera      |
| c. Coelenterata | d. Echinodermata |

4. A single membrane-bound cell organelle with hydrolytic enzymes and acidic pH is .....

- |                  |                                 |
|------------------|---------------------------------|
| a. Lysosome      | b. Ribosome                     |
| e. Golgi complex | d. Smooth endoplasmic reticulum |

5. The chromosome having only one arm is ..... chromosome.
- a. Metacentric
  - b. Submetacentric
  - c. Acrocentric
  - d. Telocentric
6. Use and disuse theory of organic evolution was proposed by .....
- a. Darwin
  - b. Wallace
  - c. De Vries
  - d. Lamarck
7. Which disease is NOT transmitted by mosquitoes?
- a. Chikungunya
  - b. Malaria
  - c. Tuberculosis
  - d. Dengue
8. The scientific name of the common rat is .....
- a. *Mus musculus*
  - b. *Rattus norvegicus*
  - c. *Rattus rattus*
  - d. *Bandicota bengalensis*
9. Philadelphia chromosome is an example of ..... mutation
- a. Deletion
  - b. Duplication
  - c. Inversion
  - d. Translocation
10. If a child is of blood group 'O' and the mother is of blood group 'A', the father cannot be of blood group .....
- a. A
  - b. B
  - c. O
  - d. AB
11. *Balanoglossus* belongs to .....
- a. Cephalochordata
  - b. Urochordata
  - c. Hemichordata
  - d. Vertebrata

12. The nitrogenous waste of birds is in the form of .....
- a. Uric acid
  - b. urea
  - c. ammonia
  - d. none of these
13. Which of the following is the primary function of the urea cycle?
- a. Production of ATP
  - b. Conversion of ammonia to urea
  - c. Synthesis of amino acids
  - d. Storage of glucose
14. The enzyme which catalyzes the conversion of pyruvate to oxaloacetate
- a. Pyruvate carboxylase
  - b. Pyruvate dehydrogenase
  - c. Pyruvate kinase
  - d. Phosphofructokinase-1
15. Intermediates of which of the following metabolic pathways have not been used in the synthesis of amino acids?
- a. Glycolysis
  - b. Fatty acid biosynthesis
  - c. Citric acid cycle
  - d. Pentose phosphate pathway
16. Copper-T interferes with the process of .....and thus pregnancy does not occur.
- a. implantation
  - b. fertilization
  - c. contact between sperm and egg
  - d. development of the embryo

17. Leydig cells are present in the .....
- a. testis
  - b. ovary
  - c. fallopian tube
  - d. uterine wall
18. A zoonotic disease is: .....
- a. Transmitted only among animals
  - b. Transmitted from animals to humans
  - c. Found only in plants
  - d. Non-infectious
19. *Treponema pallidum* is a causative agent of .....
- a. Syphilis
  - b. Typhoid
  - c. Tetanus
  - d. Plague
20. *Pyrilla perpusilla* is harmful to .....
- a. Cotton
  - b. Sugarcane
  - c. Soybean
  - d. Rice
21. The functional kidney of higher vertebrates or amniotes is .....
- a. archinephros
  - b. pronephros
  - c. mesonephros
  - d. metanephros
22. Sinus venosus is absent in the heart of .....
- a. pisces & amphibia
  - b. amphibia & reptilia
  - c. reptilia & aves
  - d. aves & mammals

23. What is the function of the semicircular canals in the inner ear of vertebrates?
- a. To detect changes in air pressure
  - b. To maintain balance and equilibrium
  - c. To amplify sound vibrations
  - d. To regulate the flow of endolymph
24. The first vertebra is called as .....
- a. Atlas
  - b. Axis
  - c. Cervical
  - d. Typical
25. .... is the largest gland in the mammalian body.
- a. Pancreas
  - b. Liver
  - c. Parotid
  - d. Submaxillary
26. ....teeth are used to pierce and tear the flesh.
- a. Incisor
  - b. Canine
  - c. Premolar
  - d. Molar
27. Medulla oblongata of mammalian brain controls
- a. Involuntary activities
  - b. Voluntary activities
  - c. Reflex action
  - d. Imprinting
28. In pigeon, the sound is produced in .....
- a. Larynx
  - b. Syrinx
  - c. Pharynx
  - d. Bronchioles
29. Southern blotting is the technique for transfer of ..... from gel to nitrocellulose membrane.
- a. DNA
  - b. RNA
  - c. Lipid
  - d. Protein

30. A plasmid consisting of a foreign DNA inserted into it, is called .....
- a. Non-coding DNA
  - b. Junk DNA
  - c. Recombinant DNA
  - d. mobile DNA
31. Enzymes that remove nucleotides one at a time from the end of a DNA molecule are called as .....
- a. Ligases
  - b. Exonucleases
  - c. Endonucleases
  - d. end-modifying enzyme
32. Which of the following is not true about the nature of the genetic code?
- a. A codon is triplet.
  - b. Codons are commaless.
  - c. Codons are overlapping.
  - d. Codons are universal.
33. The advantage of primary cell culture over cell lines is .....
- a. Infinite growth potential
  - b. Greater genetic stability and similarity to in vivo conditions
  - c. Increased resistance to contamination
  - d. Faster replication rates
34. What is the role of transgenic animals in pharmaceutical production?
- a. Producing genetically identical crops
  - b. Generating medicines such as insulin and growth hormones
  - c. Enhancing plant disease resistance
  - d. Increasing biodiversity in natural habitats

35. What defines totipotent stem cells?
- a. They can only generate blood cells
  - b. They can develop into any type of cell of that organism, including placental cells
  - c. They originate exclusively from adult tissues
  - d. They cannot differentiate into any other cell types
36. .... are a unique type of cells that have a remarkable capacity to develop into different types of cells.
- a. Stem cells
  - b. Epithelial cells
  - c. Mesenchymal cells
  - d. Ectodermal cells
37. The temperature of liquid nitrogen used for cryopreservation of cells is.....
- a. -150°C
  - b. -122°C
  - c. -90°C
  - d. -196°C
38. Spearman's rank correlation coefficient is best used for .....
- a. Determining precise values for linear data
  - b. Measuring enzymatic reactions in living cells
  - c. Calculating DNA mutation rates
  - d. Measuring relationships in non-linear and ordinal data
39. A mode in statistics represents
- a. The median value
  - b. The most frequently occurring value in a dataset
  - c. The standard deviation
  - d. The sum of all values

40. Biological data can be classified into .....
- a. Quantitative and qualitative data
  - b. Transgenic and non-transgenic data
  - c. Genetic and phenotypic data
  - d. Mutated and non-mutated data
41. Coral reefs are more abundant in .....
- a. warm ocean
  - b. cold ocean
  - c. estuaries
  - d. lakes
42. Fresh water bodies have a salt concentration of .....
- a. greater than 1%
  - b. less than 1%
  - c. less than 3%
  - d. greater than 3%
43. Study of fresh water habitat is called as .....
- a. limnology
  - b. ichthyology
  - c. herpatology
  - d. ecology
44. Which one of the following is an example of a brackish water habitat?
- a. lake
  - b. pond
  - c. estuary
  - d. mall stream
45. The ability of an organism to survive in a wide range of salinity levels is termed as .....
- a. curyhaline
  - b. stenohaline
  - c. Thermoregulation
  - d. osmoregulation



46. The salinity of Sea water is .....
  - a. 35%
  - b. 3.5%
  - c. 0.35%
  - d. 1.8%
47. The ..... organisms spend their entire life as plankton.
  - a. Meroplankton
  - b. Nektons
  - c. Holoplankton
  - d. Neuston
48. Middle layer (Metalimnion) of Thermal stratification of freshwater ecosystem shows temperature fluctuation from top to bottom, that zone is called as.....
  - a. Thermocline
  - b. Aphotic
  - c. Epilimnion
  - d. Hypolimnion
49. .... of the following is not true about cleavage cell divisions.
  - a. Those are rapid mitotic divisions
  - b. The size of the embryo does not increase
  - c. N/C ratio increases
  - d. The zygotic genes are transcribed rapidly
50. The egg of a frog is .....
  - a. Microlecithal, isolecithal
  - b. Mesolecithal, centrolecithal
  - c. Mesolecithal telolecithal
  - d. Polylecithal telolecithal
51. .... Hormones play a key role in amphibian metamorphosis.
  - a. GNRH
  - b. Growth hormone
  - c. T3 and T4
  - d. Insulin

52. In the chick embryo, the paired primordia of the heart develop as a thickening in the near the anterior intestinal portal at the 25th hour of incubation.
- a. Paraxial mesoderm
  - b. Intermediate mesoderm
  - c. Somatic mesoderm
  - d. Splanchnic mesoderm
53. Zona hatching takes place at ..... stage of the mammalian embryo.
- a. Four celled
  - b. Eight celled
  - c. Sixteen staged
  - d. Blastocyst
54. The complete zonary type placenta is found in .....
- a. Human
  - b. Cows and buffalo
  - c. Dogs and Cats
  - d. Giraffe
55. Vitellogenesis is a crucial process for .....
- a) Production of hormones
  - b) Development of the placenta
  - c) Sperm maturation
  - d) Providing nutrients to the developing embryo
56. In chick embryos, the primitive streak is important for .....
- a) Formation of the neural tube
  - b) Formation of the notochord
  - c) Formation of the mesoderm
  - d) Formation of the endoderm
57. Which among the following is called Wobble base?
- a. 1<sup>st</sup> base of codon
  - b. 3<sup>rd</sup> base of anticodon
  - c. 3<sup>rd</sup> base of codon
  - d. 1<sup>st</sup> hase of codon and 3<sup>rd</sup> base of anticodon

58. Which among the following enzyme shows DNA dependent RNA polymerization?
- a. DNA polymerase
  - b. RNA polymerase
  - c. Reverse transcriptase
  - d. both b and c
59. In DNA fingerprinting the DNA from gel is transferred to ..... for hybridization.
- a. Agarose
  - b. nitrocellulose membrane
  - c. Whatman filter paper
  - d. tissue paper
60. Which of the following is a unique property of plasmids that makes them suitable to be used as cloning vectors?
- a. can be multiplied in culture
  - b. self replication in bacterial cell
  - c. replicated in vitro with the help of enzymes
  - d. replicated freely outside the bacterial cell
61. In DNA fingerprinting the DNA from gel is transferred to .....for hybridization
- a. Agarose
  - b. nitrocellulose membrane
  - c. Whatman filter paper
  - d. tissue paper
62. Primer is chemically made up of.....
- a. protein
  - b. DNA
  - c. RNA
  - d. lipids
63. The membrane that covers the heart is .....
- a) Peritoneum
  - b) Pericardium
  - c) Mesovarium
  - d) Mesorchium

64. The transitional heart is present in .....
- a. Pisces
  - b. Amphibians
  - c. Mammals
  - d. Birds
65. The arithmetic mean of the data 2,3,5,4,1 is
- a. 5
  - b. 3
  - c. 3.5
  - d. 2
66. Gene knockout in mice is primarily used to .....
- a) Know the functions of specific genes by eliminating them
  - b) Enhance the fertility rate of lab animals
  - c) Prevent genetic disorders in humans
  - d) Improve disease resistance in livestock
67. The cavity of gastrula is called.....
- a) Blastocoel
  - b) Archenteron
  - c) Coelom
  - d) Hemocoel
68. In human the placenta is .....
- a) Haemochorial
  - b) Epitheliochorial
  - c) Syndesmochorial
  - d) Haemoendothelial
69. In ecological term high productive lake is called .....
- a) polytrophic
  - b) oligotrophic
  - c) cutrophic
  - d) pseudotrophic
70. The sea water lying between the Island and the Reef is called as .....
- a) Littoral zone
  - b) Profundal Zone
  - c) Lagoon
  - d) Hadal Zone

71. The most abundant immunoglobulin in human blood is.....
- a) IgM
  - b) IgA
  - c) IgG
  - d) IgE
72. During embryonic development, the process of haematopoiesis continues to.....
- a) liver, spleen and bone marrow
  - b) heart
  - c) lungs
  - d) brain
73. All of the following are true of antigens EXCEPT .....
- a) Antigens contain epitopes
  - b) Antigens will react with antibodies.
  - c) Antigens can elicit an immune response
  - d) Antigens contain paratopes
74. What is the primary function of dendritic cells in the immune system?
- a) Produce antibodies
  - b) Secrete histamine
  - c) Kill infected cells
  - d) Present antigens to T cells
75. A molecule that reacts with specific antibody but is not immunogenic itself is called .....
- a. Carrier
  - b. Antigen
  - c. Hapten
  - d. Immunogen
76. Plasma cells produce thousands of .....that are released into the blood.
- a. Antigens
  - b. Helper T cells
  - c. Antibodies
  - d. Virus fragments

77. In immunoglobulins, light chains and heavy chains are joined by .....
- a. Covalent bond
  - b. Hydrogen bond
  - c. Disulfide bond
  - d. Ionic bond
78. To prepare a hybridoma there is a need of .....
- i. myeloma cell
  - ii. plasma cell
  - iii. CD4 Cell
  - iv. CD8 Cell
- a. i and iii
  - b. i and ii
  - c. ii and iii
  - d. iii and iv
79. In mammals ..... is the site of maturation of B-cells.
- a) Bursa of Fabricius
  - b) Bone marrow
  - c) Lymph nodes
  - d) Thymus
80. .... is the first antibody produced in response to infection.
- a) IgM
  - b) IgG
  - c) IgA
  - d) IgE
81. .... species of Prawn is found in Chilka Lake.
- a) *M. rosenbergii*
  - b) *M. malacolumsonii*
  - c) *P. indicus*
  - d) *P. stylifera*
82. A kind of polish paper obtained from the skin of fish is known as .....
- a) Isinglass
  - b) Shagreen
  - c) Fish glue
  - d) Fish meal
83. The scientific name of Pearl oyster is .....
- a) *Pinctada vulgaris*
  - b) *Apis dorsata*
  - c) *Bombayx mori*
  - d) *Periplaneta americana*

84. Which is a very productive Pearl reef in India?
- a) East cost
  - b) Gulf of Kutch
  - c) Gulf of Manner
  - d) Pak bay
85. Indigenous Kadaknath breed of poultry bird is the native of .....
- a) Maharashtra
  - b) Madhya Pradesh
  - c) Kerala
  - d) Karnataka
86. The pearl bed which produces best quality is known as .....
- a) Lingha Pearl
  - b) Kusum
  - c) Mutaphal
  - d) None of these
87. Dry Bundh breeding pond is .....
- a) Seasonal
  - b) Perennial.
  - c) Permanent
  - d) None of these
88. ....breed of goat is a highly milk producing breed in India.
- a) Osmanabadi
  - b) Marwadi
  - c) Jamnapuri
  - d) Black Bengal
89. Dry Bundh breeding pond is .....
- a) Seasonal
  - b) Perennial
  - c) Permanent
  - d) None of these
90. In India, the largest species of honeybee is .....
- a) Apis dorsata
  - b) Apis indica
  - c) Apis florum
  - d) Apis mellifera
91. Deficiency of thyroid hormones leads to: .....
- a. Diabetes
  - b. Goiter
  - c. Hypertension
  - d. Acromegaly

92. The hormone responsible for stress response and metabolism regulation is.....
- a. Testosterone
  - b. Epinephrine
  - c. Oxytocin
  - d. Melatonin
93. The endocrine gland located in the pancreas that regulates blood glucose levels is called .....
- a. Adrenal gland
  - b. Islets of Langerhans
  - c. Pituitary gland
  - d. Hypothalamus
94. The absorption of fructose by intestinal mucosa is .....
- (a) co-transport mechanism
  - (b) simple diffusion
  - (c) facilitated transport
  - (d) active transport
95. of the following is synthesized and stored in the liver cells?
- (a) Galactose
  - (b) Lactose
  - (c) Glycogen
  - (d) Arabinose
96. Muscle fatigue is due to the accumulation of .....
- (a) carbon dioxide
  - (b) lactic acid
  - (c) creatine phosphate
  - (d) none of the above
97. A nerve impulse jumps from one ....to another during salutatory conduction
- (a) Synapse
  - (b) Axon
  - (c) Node of Ranvier
  - (d) Myelin sheath



98. .... pressure facilitates filtration while urine is being formed.

- (a) filtrate hydrostatic pressure
- (b) osmotic blood pressure
- (c) capillary hydrostatic pressure
- (d) all of these

99. ACTH controls the secretion of.....

- (a) Cortisol
- (b) Aldosterone
- (c) Epinephrine
- (d) Testosterone

100. The alveolar epithelium is .....

- (a) ciliated squamous
- (b) non-ciliated squamous
- (c) non-ciliated columnar
- (d) ciliated columnar



**Rough**