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|---|---|---|
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| C | ſ |) |

| Question Booklet No.: | | ZOPG/2022 | | | | |
|-----------------------|-----------------|------------------|--|--|--|--|
| | Register Number | | | | | |

2022 PAPER – I ZOOLOGY

(P.G. Degree Standard)

Duration: Three Hours]

[Total Marks: 300

Read the following instructions carefully before you begin to answer the questions.

IMPORTANT INSTRUCTIONS

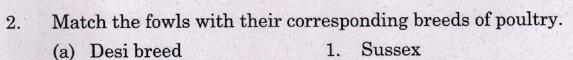
- 1. You will be supplied with this question booklet 15 minutes prior to the commencement of the examination.
- 2. This question booklet contains 200 questions. Before answering the questions, you shall check whether all the questions are printed serially and ensure that there are no blank pages in the question booklet. If any defect is noticed in the question booklet, it shall be reported to the invigilator within the first 10 minutes and get it replaced with a complete question booklet. If the defect is reported after the commencement of the examination, it will not be replaced.
- 3. Answer all the questions. All the questions carry equal marks.
- 4. You must write your register number in the space provided on the top right side of this page. Do not write anything else on the question booklet.
- 5. An answer sheet will be supplied to you separately by the room invigilator to shade the answers.

 Instructions regarding filling of answers etc., which are to be followed mandatorily, are provided in the answer sheet and in the memorandum of admission (Hall Ticket).
- 6. You shall write and shade your question booklet number in the space provided on page one of the answer sheet with BLACK INK BALL POINT PEN. If you do not shade correctly or fail to shade the question booklet number, your answer sheet will be invalidated.
- 7. Each question comprises of five responses (answers): i.e. (A), (B), (C), (D) and (E). You have to select ONLY ONE correct answer from (A) or (B) or (C) or (D) and shade the same in your answer sheet. If you feel that there are more than one correct answer, shade the one which you consider the best. If you do not know the answer, you have to mandatorily shade (E). In any case, choose ONLY ONE answer for each question. If you shade more than one answer for a question, it will be treated as a wrong answer even if one of the given answers happens to be correct.
- 8. You should not remove or tear off any sheet from this question booklet. You are not allowed to take this question booklet and the answer sheet out of the examination room during the time of the examination.

 After the examination, you must hand over your answer sheet to the invigilator. You are allowed to take the question booklet with you only after the examination is over.
- 9. You should not make any marking in the question booklet except in the sheets before the last page of the question booklet, which can be used for rough work. This should be strictly adhered to.
- 10. Failure to comply with any of the above instructions will render you liable for such action as the Commission may decide at their discretion.

SPACE FOR ROUGH WORK

| 1. | The | structure of mulberry silkworm emerging out by breaking the |
|----|-----|---|
| | | |
| | (A) | 6 th stage silkworm larvae |
| | (B) | Beetle |
| | (C) | Pupa |
| | 100 | Winged moth |
| | (E) | Answer not known |



- (b) American breed(c) English breed2. Ghagus3. Leghorn
- (d) Mediterranean breed 4. Plymouth rock
- (a) (b) (c) (d) 3 4 1 2 4 (B) 1 3 (C) 4 3 2 1 3 (D) 2 4 1
 - (E) Answer not known
- 3. Name the nutritive substance produced by the worker Bees?
 - (A) Saliva
 - (B) Bile juice
 - Royal Jelly
 - (D) Vitamins
 - (E) Answer not known

| 4. | Artif | icial method of inducing major carps to lay eggs is called |
|----|-------|---|
| | (A) | Auto fertilization |
| | 185 | Hypophysation |
| | (C) | Steroid hormone administration |
| | (D) | Parthenogenesis |
| | (E) | Answer not known |
| 5. | | mia inferens, wheat pest can be controlled by dusting with ———ent BHC powder. |
| | (A) | 2% |
| | 185 | 5% |
| | (C) | 7% |
| | (D) | 8% |
| | (E) | Answer not known |
| | | |
| 6. | 'Dea | d Hearts' disease caused by |
| | SA | Atherigona Soccata |
| | (B) | Anaphothrips Sudanensis |
| | (C) | Agrotis Biconica |
| | (D) | Agrotis spinifera |
| | (E) | Answer not known |
| 1 | | |
| 7. | | nd worms, flatworms and the Nematode worms are collectively ed as ——— worms. |
| | (A) | Blood |
| | (B) | Ectoparasitic |
| | 40 | Helminth |
| | (D) | Driller |
| | (E) | Answer not known |
| | | |

8. Black water fever associated with

- P. talciparum
 - (B) E. histolytica
 - (C) P. vivax
 - (D) T. gambiense
 - (E) Answer not known

9. Schistoma is a parasite found in

- (A) Lungs
- (B) Intestine
- (C) Blood
- (D) Liver
- (E) Answer not known

10. The Wuchereria is found in

- (A) Lungs
- (B) Eye
- Lymph node
 - (D) Gonads
 - (E) Answer not known

11. Abscesses more common in

- Liver
- (B) Brain
- (C) Leg
- (D) Hand
- (E) Answer not known

| 12. | Whic | ch syndrome occurs when one of the two X chromosomes is missing |
|-----|--------------|---|
| | in a | set of sex chromosome? |
| | (A) | Down syndrome |
| 1 | B | Turner's syndrome |
| | (C) | Klinefelter syndrome |
| | (D) | Trisomy |
| | (E) | Answer not known |
| | | |
| 13. | The | disease hydatiform mole in female is caused by |
| • | JAY- | Uniparental Diploidy |
| | (B) | Uniparental Disomy |
| | (C) | Uniparental Isodisomy |
| | (D) | Uniparental Monoploidy |
| | (E) | Answer not known |
| | | |
| 14. | Tun | nour cells create new blood supply by a process called |
| 7 | A | * Angiogenesis |
| | . (B) | Metagenesis |
| | (C) | Androphore |
| | (D) | Blastema |
| | (E) | Answer not known |
| | | |
| | | |

| 15. | The l | Hardy Weinberg law can be used to determine the frequencies of |
|-----|--------|---|
| | (A) | Chromosomes |
| | (B) | Genes |
| | 100 | Alleles |
| | (D) | Factors |
| | (E) | Answer not known |
| | | |
| 16. | The | example of inducible operon is |
| | JAY. | lac-operon |
| | (B) | try-operon |
| | (C) | arginine operon |
| | (D) | both (A) and (B) |
| | (E) | Answer not known |
| | | |
| 17. | Par | asites which cannot live without the host animals are called as |
| | July . | Obligate parasites |
| | (B) | Ecto parasites |
| | (C) | Non-living parasites |
| , | (D) | Facultative parasites |
| | (E) | Answer not known |
| | | |

| 18. | | ch of the following statements is correct regarding allosteric mes? | | | | | | | | | | |
|-----|------|---|--|--|--|--|--|--|--|--|--|--|
| | (A) | If follows Michaelis Menten kinetics | | | | | | | | | | |
| | (B) | Km represent the substrate concentration | | | | | | | | | | |
| | (0) | Effector molecule enhance or inhibit substrate binding | | | | | | | | | | |
| • | (D) | The regulatory site may be catalytic site | | | | | | | | | | |
| | (E) | Answer not known | | | | | | | | | | |
| 19. | The | number of double bonds in Arachidonic acid | | | | | | | | | | |
| 10. | (24 | 4 | | | | | | | | | | |
| • | (B) | 2 | | | | | | | | | | |
| | (C) | | | | | | | | | | | |
| | (D) | | | | | | | | | | | |
| | | Answer not known | | | | | | | | | | |
| | | | | | | | | | | | | |
| 20. | | hyl groups are attached to which carbon atom number in the cture of cholesterol | | | | | | | | | | |
| | (A) | C ₅ and C ₆ | | | | | | | | | | |
| | (B) | C ₁₆ and C ₁₇ | | | | | | | | | | |
| | (9) | C ₁₀ and C ₁₃ | | | | | | | | | | |
| | (D) | C ₁₈ and C ₁₉ | | | | | | | | | | |
| | (E) | Answer not known | | | | | | | | | | |
| | | | | | | | | | | | | |
| 21. | Cell | lulose was discovered by | | | | | | | | | | |
| | M | Anselme Payen | | | | | | | | | | |
| | (B) | Jacobus H. Van't Hoff | | | | | | | | | | |
| | (C) | Joseph A. LeBel | | | | | | | | | | |
| | (D) | Adolph Kolhe | | | | | | | | | | |

| 22. | The | enzyme ———— catalyze the interconversion of anomeric sugars. |
|-----|-------|--|
| | (A) | Fructase |
| | (B) | Amylase |
| | (C) | Sucrose |
| | 0 | Mutarotase |
| | (E) | Answer not known |
| | | |
| 23. | An a | mino acid containing sulphur |
| | w | Methionine |
| | (B) | Glycine |
| | (C) | Alanine |
| | (D) | Isoleucine |
| | (E). | Answer not known |
| | | |
| 24. | In fe | ood is added to prevent rancidity. |
| | (A) | Oleic acid |
| | (B) | Pelargonic acid |
| | (C) | Vitamin K |
| | DY | Vitamin E |
| | (E) | Answer not known |
| | | |
| 25. | | tretch of euchromatin has 200 nucleosomes. How many base pair will there in the stretch? |
| | (A) | 20,000 |
| | (B) | 30,000 |
| | (C) | 10,000 |
| | 9 | 40,000 |
| | (E) | Answer not known |
| | | |

| 26. | | | ile requic cells | uired f | for prog | ressio | on of cell cycle from G ₁ to S-phase in | | | | | |
|-----|----------|-------|----------------------|---------|----------|--------|--|--|--|--|--|--|
| | (A) | | K2/cycl: | in E | | | | | | | | |
| | (B) | | K2/cycl | | | | | | | | | |
| | (C) | | | | | | | | | | | |
| | (D) | | | | | | | | | | | |
| | (E) | | swer no | | vn | | | | | | | |
| 27. | Mat | ch th | ne follov | ving. | | | | | | | | |
| | (a) | Telo | centric | | | 1. | Centromere at centre | | | | | |
| | (b) | Acro | centric | | | 2. | Centromere near the centre | | | | | |
| | (c) | Sub | metace | ntric | | 3. | Centromere at proximal end | | | | | |
| | (d) | Met | acentri | c | | 4. | Centromere at one end | | | | | |
| | | (a) | (b) | (c) | (d) | | | | | | | |
| | (A) | 2 | 4 | 1 | 3 | | | | | | | |
| | (B) | 4 | 2 | 3 | 1 | | | | | | | |
| | JOS | 3 | 4 | 2 | 1 | | | | | | | |
| | (D) | 1 | 4 | 3 | 2 | | | | | | | |
| | (E) | An | swer no | t kno | wn | | | | | | | |
| 28. | | | cule for al syste | | from cy | tosoli | c ATP acts as 'second messenger' in | | | | | |
| | (A) cDNA | | | | | | | | | | | |
| | S | cAl | MP | | | | | | | | | |
| | (C) | AD | P | | | | | | | | | |
| | (D) | AT | Pase | | | | | | | | | |

| 29. | Iden | tify the in | correct n | natch: | | *. | |
|-----|------------|--------------------------|---|----------------|-------|------------------|-------|
| • | (1) | WWF - | World | l Wild Life F | ound | ation | |
| | (2) | IBWL - | India | n Board for V | Wildl | ife | |
| | (3) | BNHS - | Bomb | ay Natural l | Histo | ry Society | |
| | (4) | WPSI - | Wildl | ife Protection | n Soc | iety | |
| | (A) | (1) and (3 | 3) | | | | |
| | (B) | (2) and (4 | 1) | | , | | |
| | (C) | (2) and (3 | | | | | |
| | | (1) and (4 | | | | | |
| | (E) | Answer r | | n | | | |
| | | | | | | | |
| 30. | In A | cinonyx it | ıbatus th | ne gestation | perio | d ranging from — | days. |
| 00. | (A) | 90–92 | | + | | | |
| | (B) | 90–95 | | | | | |
| | | 90–98 | | | | | |
| | (D) | 90–100 | | | | | |
| | | | not knou | m | | | |
| | (E), | Answer | HOL KHOW | /II | | | |
| | | | | | | | |
| 31. | Mat (a) | tch the fol Gir Natio | CONTRACTOR OF THE PARTY OF THE | ζ | 1. | Karnataka | |
| | (b) | Bandipu | | | 2. | Rajasthan | |
| | (c) | Simhpal | | | 3. | Gujarat | |
| | (d) | | | tional Park | 4. | Orissa | |
| | (A) | (a) (b) 2 4 | (c) 3 | (d) 1 | | | |
| | (A) | $\frac{2}{3}$ 1 | 4 | 2 | | | |
| | (C) | 2 3 | | 4 | | | |
| | (D) | | | 4 | | | |
| | (E) | Answer | not know | VII | | | |

| 32. | Which of the following fact is not associated with natural selection theory? | | | | | | | | |
|-----|--|---|--|--|--|--|--|--|--|
| | (A) Variations | | | | | | | | |
| | (B) | Prodigality of production | | | | | | | |
| | (0) | Inheritance of acquired characters | | | | | | | |
| | (D) | Struggle for existence | | | | | | | |
| | (E) | Answer not known | | | | | | | |
| | | | | | | | | | |
| 33. | Asse | rtion and Reason: | | | | | | | |
| | Assertion [A]: Cannibalism among primitive men was almost a ritual ceremony. | | | | | | | | |
| | Reas | of Homoerectus, which have been broken apart at the base in such a way as to suggest that brains were removed for eating. | | | | | | | |
| | (A) | [A] is false but [R] is true | | | | | | | |
| | (B) | [A] is true but [R] is false | | | | | | | |
| | SOF | [A] and [R] are true and [R] is the correct explanation | | | | | | | |
| | (D) | [A] and [R] are true but [R] is not the correct explanation | | | | | | | |
| | (E) | Answer not known | | | | | | | |
| | | | | | | | | | |
| 34. | The | heart of the bird is ——— chambered. | | | | | | | |
| | M | Four | | | | | | | |
| | (B) | Three | | | | | | | |
| | (C) | Double | | | | | | | |
| | (D) | Single | | | | | | | |
| | (E) | Answer not known | | | | | | | |

- 35. The fish 'synaptara' is
 - (A) Surface dweller
 - (B) Mid-depth dweller
 - Bottom dweller
 - (D) Lower-depth dweller
 - (E) Answer not known
- 36. Which among the following refers to the bird migration resulting from the need to occupy a special region or environment for some part of reproductive process?
 - (A) Climatic migration
 - (B) Gametic migration
 - (C) Erratic migration
 - (D) Alimental migration
 - (E) Answer not known
- 37. Match the following.
 - (a) Rhyncocephalians
 - (b) Geosaurus
 - (c) Baurusuchus
 - (d) Alligator
 - (a) (b) (c) (d)
 - (A) 3 1 4 2
 - (B) 4 1 2 3
 - (C) 1 2 3 4
 - (D) 4 2 1 3
 - (E) Answer not known

- 1. Jurassic age
- 2. Eusuchian
- 3. Sphenodon
- 4. Sebasuchian

38. Assertion [A]: Many strongly electric fishes get the shock of self stimulation while discharging their electric organs outside water.

Reason [R]: It is because the voltage across the body tissue is decreased in air.

- [A] is true, [R] is false
- (B) [A] is false, [R] is true
- (C) Both [A] and [R] is true
- (D) Both [A] and [R] is false
- (E) Answer not known
- 39. The electric power generated by the ray fish is _____
 - (A) 1000 Volts
 - (B) One Volt
 - (C) 10 Hertz
 - 100 Volts
 - (E) Answer not known
- 40. Which of the following statements are true about electron microscopy?
 - (i) In the electron microscope, electrons are focused on the plane of the object by means of magnetic coil.
 - (ii) In the electron microscope, streams of electrons are deflected by an electrostatic or an electromagnetic field.
 - (iii) The electron microscope permits direct study of biological ultra structure.
 - (iv) The anode of the electron microscope emits the stream of electrons.
 - (A) (i), (ii), (iv)
 - (B) (ii), (iii), (iv)
 - (i), (ii), (iii)
 - (D) (i), (iii), (iv)
 - (E) Answer not known

- 41. The increasing diversification of form and function in an organism is called
 (A) Involution
 (B) Differentiation
 (C) Extension
 (D) Delamination
 (E) Answer not known
 - 42. The movement of masses of cells toward each other and their fusion into one cell is called
 - (A) Concrescence
 - (B) Convergence
 - (C) Divergence
 - (D) Extension
 - (E) Answer not known
 - 43. Fertilizin glycoprotein is called
 - (A) Polysaccharide
 - (B) Acrosomin
 - (C) Proteoglycan
 - (D) Hyalurodinase
 - (E) Answer not known

| 44. | The | activation of eggs by sperm cells during fertilization is triggered by ——ions. |
|-----|-----|--|
| | w | Calcium |
| | (B) | Manganese |
| | (C) | Magnesium |
| | (D) | Sodium |
| | (E) | Answer not known |
| 45. | | he modern era of immunisation, who discovered the method of nuating vaccination? |
| | (A) | Edward Jenner |
| | 100 | Louis Pasteur |
| | (C) | Jonas Salk |
| | (D) | Albert Sabin |
| | (E) | Answer not known |
| 46. | The | immunoglobulin which is found in colostrum? |
| | (A) | ' IgA |
| | (B) | IgM |
| | (C) | IgE |
| | (D) | IgG |
| | (E) | Answer not known |
| 47. | Det | ection of unknown antibodies in VORL by |
| | JAY | Precipitation |
| | (B) | Agglutination |
| | (C) | Haemagglutination |
| | (D) | Coombs test |
| | (E) | Answer not known |

| The second second | ~ | | | |
|-------------------|-----------|------------|-----------|----|
| 48 | Secondary | immune | response | 18 |
| 10. | Decomment | 1111111111 | ropported | |

- (A) Immune responses against the subsequent exposure of same animal with same antigen
 - (B) Exposure of antigen at the first time
 - (C) Platue phase of response
 - (D) Decline phase of response
 - (E) Answer not known
- 49. Monocytes produce type of cytokine.
 - (A) IL 1
 - (B) IL-2
 - (C) IL-3
 - (D) IL-4
 - (E) Answer not known
- 50. Interleukin 4 is secreted by
 - (A) TH cell
 - (P) T_H 2 cell
 - (C) T_H 1 cell
 - (D) B cell
 - (E) Answer not known
- 51. The ingestion of liquid food through the surface of the body is

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- (A) phagocytosis
- pinocytosis
 - (C) invagination
 - (D) import
 - (E) Answer not known

52. Choose the correct matches among the following:

1. Secondary structure

Linear sequence

2. Tertiary structure

Overall fold of protein sequence

3. Quaternary structure

- Arrangement of alpha helices

and beta strands

4. Quinternary structure

 Arrangement of separate molecules, protein-protein or protein-nucleic acid

- (A) 1 and 2 are correct
- (B) 2 and 3 are correct
- 2 and 4 are correct
- (D) 3 and 4 are correct
- (E) Answer not known

53. Choose the correct answer:

Chi-square is zero when expected frequency is

- (A) Lesser than observed frequency
- Equal to observed frequency
 - (C) Double than the observed frequency
 - (D) Greater than the observed frequency
 - (E) Answer not known

54. The following distribution is used for testing a hypothesis

- (A) Gamma Distribution
- (B) Poisson Distribution
- (C) Normal Distribution
- Chi-square Distribution
 - (E) Answer not known

- 55. What is otherwise called as surface diagram?
 - (A) One dimensional diagram
 - (B) Three dimensional diagram
 - Two dimensional diagram
 - (D) Pictograms
 - (E) Answer not known
- 56. The data which are collected directly from the field is called as
 - (A) Quantitative data
 - (B) Secondary data
 - Primary data
 - (D) Qualitative data
 - (E) Answer not known
- 57. Demerits of standard deviation
 - (A) It gives more weightage to extreme values and less to the values which are near to the mean
 - (B) It is rigidly defined
 - (C) It is based on all the observations
 - (D) It is less affected by sampling fluctuations
 - (E) Answer not known
- 58. A circle divided into sectors proportional to the frequency of items shown is called
 - (A) Frequency polygon
 - (B) Histogram
 - Pie chart
 - (D) Bar chart
 - (E) Answer not known

| 9. | Whi | ch of the following statements are true about standard devi |
|-----|-------|---|
| | (i) | It is a measure of dispersion. |
| | (ii) | It is the root mean square deviation. |
| | (iii) | It is the average deviation or mean variation. |
| | (iv) | It is the square root of variance. |
| | (A) | (i), (iii), (iv) |
| 1 | (B) | (i), (ii), (iii) |
| | SOY | (i), (ii), (iv) |
| | (D) | (i), (iv) |
| | (E) | Answer not known |
| 60. | The | two phases in chromatography methods |
| | (A) | Stationary phase and separation phase |
| | (B) | Mobile phase and separation phase |
| | (C) | Gaseous phase and liquid phase |
| | DY | Stationary phase and mobile phase |
| | (E) | Answer not known |
| 61. | BKI | M-DNA probe for DNA finger printing was isolated from |
| | A | Snake |
| | (B) | Fruitfly |
| | (C) | Rhesus monkey |
| | (D) | Retrovirus |
| T. | (E) | Answer not known |
| | | |

62. Assertion [A]: For determining the parentage of a child 50% bands in the child's DNA print should match with those of the father's DNA print and the rest should match with those of the mother's DNA print.

Reason [R]: Half of the DNA of the child come from the father and the other half of the DNA come from the mother.

- (A) [A] and [R] are correct
- (B) [A] and [R] are correct but [R] is not the correct explanation for [A]
- (C) [A] and [R] are not true
- [A] is true and [R] is the correct explanation for [A]
 - (E) Answer not known
- 63. Which of the following is incorrectly paired?
 - 1. PCR Polymerase Chain Reaction
 - 2. RAPD Restriction Amplified Polymerase DNA
 - 3. RFLP Restriction Fragment Length Polymorphism
 - 4. FISH Fragment Immuno Synthetic Hybrid
 - 2 and 4 are incorrect
 - (B) 1 and 3 are incorrect
 - (C) 2 and 3 are incorrect
 - (D) 3 and 4 are incorrect
 - (E) Answer not known
- 64. What type of Radiolabelled substances Involved in the Events of Nucleic acid metabolism during generation?
 - (A) C14 labelled glycine
 - H³ labelled cysidine
 - (C) H³ labelled thymidine
 - (D) C14 labelled adenine
 - (E) Answer not known

| 65. | The | filament used as electron source in transmission electron microscope |
|-----|------|--|
| | (A) | Copper |
| | B | Tungsten |
| | (C) | Steel |
| | (D) | Aluminium |
| | (E) | Answer not known |
| | | |
| 66. | The | first electron microscope was designed by |
| | (A) | Janssen and Hans |
| | DI | Knoll and Ruska |
| | (C) | August Kochler |
| | (D) | Lawrence Smith |
| | (E) | Answer not known |
| | lit. | |
| 67. | elec | ch among the following is the technique applied to transmission tron microscope to obtain a detailed three dimensional view of acellular structures? |
| | (A) | Shadowing |
| | (B) | Shadow casting |
| | (0) | Freeze – Etching |
| | (D) | Scanning Probe |
| | (E) | Answer not known |
| | | |
| 68. | The | larval form of sea urchin is |
| | w | Echinopluteus |
| | (B) | Auricularia |
| | (C) | Pentacrinoid |
| | (D) | Brachiolaria |
| | (E) | Answer not known |

69. Respiration in Gastropods occurs by

- (A) Tracheal system
- (B) Book Lungs
- (C) Pallium
- Ctenidia and Lungs
 - (E) Answer not known

70. Enteronephric nephridia are

- (A) Septal
- (B) Pharyngeal
- (C) Integumentary
- Pharyngeal and Septal
 - (E) Answer not known

71. Match the following:

- (a) Pseudocoel
- 1. Starfish
- (b) Haemocoel
- 2. Taenia solium
- (c) Schizocoel
- 3. Ascaris
- (d) Enterocoel
- 4. Cockroach
- 5. Earthworm

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- (a)
- (b)

3

4

4

(c) (d)

4

3

1

1

- (A) 2
- 5
- (B) 5
- 1
- 3

(D)

- 5
- 3
- 5
- (E) Answer not known

| 72. | A re | ef having no | navigable | channel or | r irregular | channel | between | the |
|-----|------|--------------|---|------------|-------------|---------|---------|-----|
| | shor | e and reef | | | | | | |
| • | SAY | Fringing ree | f | | | | | |
| | (B) | Coral Island | | | | | | |
| | (C) | Atoll reef | 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - | | | | | |
| | (D) | Barrier reef | | | | | | |

- (E) Answer not known
- 73. The pork tapeworms in the human intestine is
 - Taenia solium
 - (B) Taenia saginata
 - (C) Taenia echinococcus
 - (D) Hymenolepis
 - (E) Answer not known

74. Choose the correct answer:

- 1. Fringing reefs are with deeper Lagoons.
- 2. Barrier reefs are located near the shore of Islands.
- 3. Atolls have coral Islands on their surface.
- (A) 1 and 2
- (B) 1 and 3
- (C) 2
- 3
 - (E) Answer not known

| | 10 W. 11 T. 11 | |
|-----|--|---|
| 75. | Who | made significant contribution in the field of animal classification? |
| | (A) | Oparin |
| | (B) | Linnaeus |
| | (C) | Lamarck |
| | (D) | Pasteur |
| | (E) | Answer not known |
| | | |
| 76. | Whi | ch of the following is crustacean parasite? |
| | (A) | cyclops |
| | (B) | calanus |
| | JOY - | sacculina |
| | (D) | cypris |
| | (E) | Answer not known |
| | | |
| 77. | | scidian, active free swimming larva is transformed into adult by the ess of |
| | (A) | Progressive metamorphosis |
| | D | Retrogressive metamorphosis |
| | (C) | Metamorphosis |
| | (D) | Metamerism |
| | (E). | Answer not known |
| | | |
| 78. | In e | lphidium, sexual reproduction occurs in |
| | (A) | Microspheric form |
| | (B) | Isogamy |
| | JOY - | Megalospheric form |
| | (D) | Feeding stage |
| | (E) | Answer not known |
| | | |

| 79. | The | key enzyme for urea cycle in mammals is |
|-----|------|---|
| | US. | Urease formed in liver |
| | (B) | Carbamyl phosphatase in liver |
| | (C) | Arginase formed in liver |
| | (D) | Urease formed in kidney |
| | (E) | Answer not known |
| | | |
| 80. | Test | tosterone is synthesized in |

- (A) Seminal vesicle
- (B) Epididymis
- (C) Placenta
- Leydig cells
 - (E) Answer not known
- 81. Choose the correct answer:

The precursor for the synthesis of androgen is

- (A) Cholesterol
- (B) Tyrosin
- (C) Endorphin
 - (D) Pro-opiomelanocortin
 - (E) Answer not known
- 82. Which organ will develops embryonic ectoderm layer?
 - (A) Muscles
 - (B) Heart
 - (C) Ear
 - (D) Blood
 - (E) Answer not known

| 83. | The | chief muscles involved in the process of inspiration is |
|-----|------------------|---|
| | (A) | Inspiratory muscles |
| | (B) | Internal intercostal muscles |
| | (C) | Abdominal muscles |
| | DY | External intercostal muscles |
| | (E) | Answer not known |
| | | |
| 84. | | uction of red blood cells is controlled by erythropoietin a hormone uced by the |
| | A | kidney |
| | (B) | bone marrow |
| | (C) | reticulo endothelial cells |
| | (D) | nerve |
| | (E) [*] | Answer not known |
| | | |
| 85. | An i | ncreased amount of enzyme is used to diagnose the heart attack |
| | (A) | nuclease |
| | (B) | lactase |
| | 5 | transaminase |
| | (D) | transamylase |
| | (E) | Answer not known |
| | | |
| 86. | | relationship between the partial pressure of oxygen and percentage tration of heamoglobin with oxygen is called |
| | (A) | Lung volume |
| | (B) | Oxygen association curve |
| | (C) | Carbondioxide dissociation curve |
| | DY | Oxygen dissociation curve |

| 87. | The | absorption of glucose takes place in |
|-----|------|---|
| | (A) | large intestine |
| | (B) | stomach |
| | (C) | duodenum |
| | DI | small intestine |
| | (E) | Answer not known |
| | | |
| 88. | Bile | salts in mammals are |
| | (A) | Haemoglobin and biliverdin |
| | (B) | Bilirubin and biliverdin |
| | (C) | Bilirubin and pepsin |
| | DY | Sodium glycolate and taurocholate |
| | (E) | Answer not known |
| | | |
| 89. | | energy output of the human body under basal or standard litions is called |
| | (A) | Higher metabolic rate |
| | DY | Basal metabolic rate |
| | (C) | Respiration quotient |
| | (D) | Calorific value |
| | (E) | Answer not known |
| | | |
| 90. | HCl | is secreted by which of the following cells? |
| | (A) | Autonomic cells |
| | (B) | Muscle cell |
| | (0) | Oxyntic cell |
| | (D) | Blood cell |

- 91. Atmospheric scientists have developed complex computer model's of earth's climate system is
 - (A) General Circulation Models (GCM)
 - (B) Intergovernmental Panel on Climate Change (IPCC)
 - (C) National Ocean and Atmospheric Administration (NOAA)
 - (D) Geo Physical Fluid Dynamic Lab (GFDL)
 - (E) Answer not known
- 92. Which article in constitution recognizes environmental protection as one of the fundamental duties of every citizen of India?
 - (A) Article 42
 - (B) Article 48A
 - Article 51A(g)
 - (D) Article 52
 - (E) Answer not known
- 93. How many chapters and sections are there in "Environment Protection Act 1986"?
 - (A) 4 Chapters and 24 Sections
 - (B) 3 Chapters and 22 Sections
 - 4 Chapters and 26 Sections
 - (D) 4 Chapters and 22 Sections
 - (E) Answer not known

| 94. | Mat | ch th | e follov | ving: | | | |
|-----|---------|-------------------|---|-----------------|-------------|-------|--|
| | (a) | Alde | hydes | | | 1., | Coal and oil combustion |
| | (b) | Carb | on mor | noxides | | 2. | Bleaching of cotton and flour |
| | (c) | Sulp | hur | | | 3. | Thermal composition of fat/oil |
| | (d) | Chlo | rines | | | 4. | Burning of coal |
| | 1 | (a) | (b) | (c) | (d) | | |
| | (A) | 3 | 2 | 1 | 4 | | Aller Aller I. Yang et in the first |
| | (B) | 1 | 3 | 4 | 2 | | |
| | (C) | 3 | 4 | 2 | 1 | | |
| | (25) | 3 | 4 | 1 | 2 | | |
| | (E) | Ans | swer no | t know | n | | |
| 95. | (A) (B) | Car Nit Fre | t. Such rbondio rates on gas rbon m | polluta xide | ants and | are | th haemoglobin and impede oxygen |
| 96. | | ich o lution | | llowing | city | is re | ported to have highest carbon mono oxide |
| | W | - Ko | lkata | | | | |
| | (B) | Ne | w Delh | i | | | |
| | (C) | Ch | ennai | | | | |
| | (D) | Mu | ımbai | | | | |
| | (E) | | | ot know | 'n | | |
| | ` ' | | | | | | |

- 97. Select the correct order of the five distinct layers of atmosphere
 - (A) Troposphere, mesosphere, stratosphere, ionosphere, exosphere
 - (B) Stratosphere, troposphere, ionosphere, mesosphere, exosphere
 - Troposphere, stratosphere, mesosphere, ionosphere, exosphere
 - (D) Exosphere, stratosphere, troposphere, mesosphere, ionosphere
 - (E) Answer not known
- 98. Which of the following is not a source of raw material for bio-ethanol production?
 - (A) Sugarcane
 - (B) Sweet sorghum
 - Jatropha
 - (D) Sugar beet
 - (E) Answer not known
- 99. The following is not involved in the vital role of Forests?
 - (A) Productive
 - (B) Protective
 - (C) Regulative
 - Destructive
 - (E) Answer not known
- 100. The origin for wind energy is
 - (A) Moon
 - (B) Star
 - Sun
 - (D) Water
 - (E) Answer not known

| 101. | The as | zone of ocean which is characterised by complete darkness is known |
|------|--------|--|
| | (A) | Benthic Zone |
| | (B) | Mesopelagic Zone |
| | (C) | Dark Zone |
| | (D) | Bathypelagic Zone |
| | (E) | Answer not known |
| 102. | The | most important pearl oyster |
| | (A) | Pinctada anomoides |
| , | DI | Pinctada fucata |
| | (C) | Pinctada chemnitzi |
| | (D) | Pinctada margaritifera |
| | (E) | Answer not known |
| 103. | The | type of hardy fishes that can be grown along with prawns are |
| | (A) | Cat fish |
| | B | Tilapia |
| | (C) | Carps |
| | (D) | Channa |
| | (E) | Answer not known |
| | | |
| 104. | Lac | insect belongs to the order |
| | (A) | Hymenoptera |
| | DY | Hemiptera |
| | (C) | Homoptera |

(D) Diptera

105. Match the following:

- (a) Rock bee
- (b) Indian bee
- (c) Little bee
- (d) Italian bee
 - (a)
- (b)
- (c)
- 4 1
- (P) 2

(A) 2

3

4

4

(d)

3

1

2

- (C) 3
- 14
- 1

4

- (D) 1
- 2
- 3
- (E) Answer not known

- 1. Apis mellifera
- 2. Apis dorsata
- 3. Apis indica
- 4. Apis florea

106. Honey Bee larva feed with

- (A) Royal jelly
- (B) Honey
- (C) Pollen
- (D) Water
- (E) Answer not known

107. Pebrine disease in silkworm is caused by

- (A) Bacteria
- (B) Fungi
- Protozoa
- (D) Nematodes
- (E) Answer not known

108. Eleuthronema tetradactlylum is one of the species of Polynemids

- (B) Prawns
- (C) Polychaetes
- (D) Predatory fishes
- (E) Answer not known

109. Taenia solium is commonly known as

- (A) Beef tapeworm
- (B) Human tapeworm
- Pork tapeworm
- (D) Sheep-liver fluke
- (E) Answer not known

110. Bombay duck is the popular name of

- (A) Hilsa ilisha
- (B) Thanu vala
- (C) Chala vala
- (D) Harpodon neherius
 - (E) Answer not known

111. Trichuriasis is caused by the parasite

- Trichuris trichura
- (B) Enterobius vermicularis
- (C) Ancylostoma duodenale
- (D) Trichinella spiralis
- (E) Answer not known

| 112. | Schu | ffener's granules are found in life cycle of plasmodium in |
|------|------|---|
| | (A) | W.B.C. of man |
| | (B) | RBC of man |
| | (C) | Liver cells of man |
| | (D) | All the above |
| | (E) | Answer not known |
| | | |
| 113. | Gerr | n cells collection containers are made up of |
| | (A) | Copper |
| | P | Lead |
| | (C) | Steel |
| | (D) | Silver |
| | (E) | Answer not known |
| | 10 | |
| 114. | The | best method used in inducing mutation in-microorganism |
| | (A) | X-rays |
| | (B) | Beta-rays |
| | (0) | • UV-rays |
| | (D) | Gamma-rays |
| | (E) | Answer not known |
| | | |
| 115 | | ple who carry an allele for normal haemoglobin and one allele for le cell resistant to malaria. They are examples of |
| | (A) | Heterozygote advantage |
| | (B) | Extreme diploidy |
| | (C) | Outbreeding |
| | (D) | Recessive superiority |

| 116. | Match | the | foll | owing. |
|------|-------|-------------|------------------|--------|
| | | 20010 10000 | PENGHAUM AND THE | 0 |

- (a) Hodgkin's disease
- (b) Carcinoma
- (c) Sarcoma
- (d) Myeloma
 - (a) (b) (c) (d)
- (A) 1 2 3 4
- (B) 2 4 1 3
- (C) 4 3 1 2 (D) 3 1 2 4
- (E) Answer not known

- 1. Connective tissue cancer
- 2. β -lymphocyte cancer
- 3. Skin cancer
- 4. Cancer of liver

117. Select the correct match.

- Morphological mutations alterations in the external form
- (B) Lethal mutations overcome by nutrients
- (C) Biochemical mutations leading to death
- (D) Resistant mutations expressed only in certain condition
- (E) Answer not known

118. Match the cancer sites with the carcinogens.

- (a) Cigarettes
- (b) Aromatic amines
- (c) Vinyl chloride
- (d) UV radiation
 - (a) (b) (c) (d)
- (A) 4 3 2 1
- (B) 2 1 3 4
- (C) 1 4 2 3
- (D) 2 3 4 1
- (E) Answer not known

- 1. Skin
- 2. Lungs
- 3. Bladder
- 4. Liver

| | * | | | | | | |
|------|---------------|--------|--------|----------|-----------|---------|---------|
| 119. | Mat | ch the | follo | wing. | | | |
| | (a) | Hered | ditary | mater | ials | 1. | Genes |
| | (b) | Cross | ing ov | ver DN | A | 2: | Recon |
| | (c) | Muta | ted ge | enetic r | naterial | 3. | Muton |
| | (d) | Codir | ng for | a singl | e polypep | tide 4. | Cistron |
| | | (a) | (b) | (c) | (d) | | |
| | (A) | 2 | 3 | 4 | 1 | | |
| | (B) | 3 | 4 | 1 | 2 | | |
| | CY | 1 | 2 | 3 | 4 | | |
| | (D) | 4 | 2 | . 3 | 1 | | |
| | (E) | Ans | wer n | ot knov | vn | | |
| | 7 3 THE R. P. | | | | | | |

- 120. Law of segregation and law of independent assortment had been formulated by
 - Gregor Mendel
 - (B) Johannsen
 - (C) T.H. Morgan
 - (D) Louis Pastuer
 - (E) Answer not known
- 121. Endogenous secretion of insulin production can be estimated by
 - (A), α chain of insulin
 - (B) Proinsulin
 - C-Peptide
 - (D) β Chain of insulin
 - (E) Answer not known
- 122. Acidosis is the lowering of pH in the blood is due to
 - rise in acetoacetate and D- β -hydroxy butyrate
 - (B) decrease in acetoacetate and D- β -hydroxy butyrate
 - (C) rise in acetoacetate decarboxylase
 - (D) low in L-β-hydroaxacyl-CoA
 - (E) Answer not known

| 123. | | ch th | | | Amino | acids | s with | their | respective | additional |
|------|-----|--------|-------|-----|-------|-------|---------------------|---------|------------|------------|
| | (a) | Gluta | mic a | cid | | 1. | Carboxy | yl grou | p . | |
| | (b) | Lysin | e | | | 2. | Guanid | ino gro | oup | |
| | (c) | Argin | ine | | | 3. | [midazo | ole gro | up | |
| | (d) | Histic | dine | | | 4. | ε -Amin | o grou | ıp | |
| | | (a) | (b)· | (c) | (d) | | | | | |
| | (A) | 1 | 2 | 3 | 4 | | | | | |
| | P | 1 | 4 | 2 | 3 | | | | | |
| | (0) | 1 | 9 | 9 | 1 | | | | | |

124. Laboratory test, which employed to identify the reducing sugars.

1

(A) 'Bial's test

(D)

(E)

(B) Mucic acid test

3

Answer not known

- Benedict's test
 - (D) Phenol red test
 - (E) Answer not known
- 125. Match the following.
 - (a) Essential fatty acid
 - (b) Saturated fatty acid
 - (c) Neutral fat
 - (d) Steroid
 - (a) (b) (c) (d) (A) 1 2 3 4 (B) 1 4 2 3
 - (D) 2 3 4 1
 - (E) Answer not known

- 1. Cholesterol
- 2. Triglycerides
- 3. Stearic acid
- 4. Arachidonic acid

| 100 | C: | le stranded RNA occurs as genetic material in |
|------|------|--|
| 126. | | Plants |
| | (A) | Plant virus |
| • | (C) | Plant bacteria |
| | (C) | |
| | (D) | Plant fungi Answer not known |
| | (E). | Allswer not known |
| 127. | The | nucleotide sequence with high melting temperature (Tm) is |
| | | AAATTT |
| | (B) | AAGTTC |
| | (C) | GGGCCC |
| e 7 | (D) | GGATTC |
| | (E) | Answer not known |
| | | |
| 128. | | breaking this bond, nitrogenous base from a nucleoside can be ased. |
| | (A) | Phosphodiester bond |
| | (B) | Hydrogen bond |
| | (0) | Glycosidic bond |
| | (D) | Peptide bond |
| | (E) | Answer not known |
| | | |
| 129 | pho | sitol triphosphate (IP ₃) and Diacyl glycerol (DAG) are formed sphatidyl inositol biphosphate (PIP ₂) by the action of ——— on surface receptors. |
| | (A) | • Phospholipase C |
| | (B) | Guanyl cyclase |
| | (C) | Calmodulin |
| | (D) | Adenyl cyclase |
| | (E) | Answer not known |
| | | |

| | (A) | Nuclease Enzymes |
|------|--------|---|
| | (B) | DNA polymerases |
| | (C) | DNA Ligases |
| | (D) | De oxy ribo nucleases |
| | (E) | Answer not known |
| | | |
| 131. | "Nis | sl Bodies" of neurons are |
| | (A) | Rough endoplasmic reticulum |
| | (B) | Smooth endoplasmic reticulum |
| | (C) | Golgi complex |
| | (D) | Centrioles |
| | (E) | Answer not known |
| | | |
| 132. | Subi | metacentric chromosomes have |
| | (A) | Long arms |
| | (B) | Equal arms |
| | (C) | Short arms |
| | 0 | Unequal length arms |
| | (E) | Answer not known |
| | | |
| 133. | In w | hich of the following National Park Indian Rhino is conserved |
| | (A) | Corbette National Park |
| | (B) | Kaziranga National Park |
| | (C) | Manas National Park |
| | (D) | Kaimur National Park |
| | (E) | Answer not known |
| | | |
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| | | |

130. The enzymes which attack 5' or 3' end on the DNA molecules are

| 134. | Ance | stors of mammals belong to |
|------|-------|--|
| | (A) | Chelonia |
| | (B) | Silusidea |
| | (0) | Therapsida |
| | (D) | Ornithischia |
| | (E) | Answer not known |
| 135. | Amp | ohibians have originated during ———————————————————————————————————— |
| | (A) | Devonian |
| | (B) | Permian |
| | (C) | Carboniferous |
| | (D) | Triassic |
| | (E) | Answer not known |
| | | |
| 136 | . Cha | arles Darwin discovered the Darwin's finches in ———— island. |
| | (A) | Virgin |
| | (B) | Hawai |
| | (C) | Andaman |
| | 0 | Galapagos |
| | (E) | Answer not known |

| | | | | | | A COLUMN TO A | Party let let | | |
|------|-------|-----|------|---------|-----------|---------------|---------------|-----------|-----------|
| 107 | TO: 1 | | 11 | | statement | about | +ha | migration | of hinda |
| 1.37 | ring | OHE | The | wrong | statement | apout | tne | migration | or pirus. |
| TO | TITIC | out | OTTO | 1110115 | Decree | COCC | | 0 | |

- (A) The most familiar migration of birds are from north and south
- Birds learn their routes from their elders
- (C) Birds partly navigate by the observation of the position of the sun and stars
- (D) Migratory birds may be deviated by the features of the environment
- (E) Answer not known

138. Beak in sparrow is

- (A) Seed eating
- (B) Cutting
- (C) Tearing and piercing
- (D) Fruit eating
- (E) Answer not known

139. The fish which is called climbing perch

- (A) Hippocampus
- (B) Starfish
- (C) Anabas
 - (D) Megalops
 - (E) Answer not known

140. Ancestors of amphibians were

- (A) Osteolipids
- (B) Ornithorynchus
- (C) Theropsids
- (D) None of the above
- (E) Answer not known

141. Anura are

- (A) Scaleless fishes
- (B) Scaled reptiles
- (C) Scaleless amphibia
 - (D) Wingless birds
 - (E) Answer not known

142. Heart in crocodiles is

- (A) Incompletely 4 Chambered
- (B) Completely 4 Chambered
 - (C) 3 Chambered
 - (D) 2 Chambered
 - (E) Answer not known

| 143. | Cata | dromons migratory fish |
|------|-------|--|
| | (A). | Salmo trutta |
| | (B) | Salmo salar |
| | (C) | Scomber scombrus |
| | DY | Anguilla anguilla |
| | (E) | Answer not known |
| | | |
| 144. | Why | does the mammalian spermatozoa produce hyaluronidase enzyme |
| | duri | ng fertilization? |
| • | (A) | To dissolve the cementing substance hyaluronic acid of the follice |
| | | cells |
| | (B) | To attract egg |
| | (C) | To produce acrosomal filament |
| | (D) | To transport yolk |
| | (E) | Answer not known |
| | | |
| 145. | The | deformities in limb development of the foetus is caused by the usage |
| ÷ | of di | rug, ——— in pregnancy. |
| | (A) | quinine |
| | (B) | aspirin |
| | (C) | heroin |
| | (D) | thalidomide |
| | (E) | Answer not known |
| | | |

- 146. Identify the structure that undergoes second meiotic division during the process of spermatogenesis
 - (A) Secondary spermatocyte
 - (B) Spermatid
 - (C) Primary spermatocyte
 - (D) Sertoli cell
 - (E) Answer not known
- 147. In honey bees only parthenogenetic males are produced in
 - (A) Arrhenotoky
 - (B) Thelytoky
 - (C) Autofertilization
 - (D) Ameiotic parthenogenesis
 - (E) Answer not known
 - 148. The diploid stages in human spermatogenesis are
 - (A) Primary and secondary spermatocytes
 - (B) Secondary spermatocyte and spermatid
 - (C) Primary spermatocyte and spermatogonium
 - (D) Spermatogonium and spermatid
 - (E) Answer not known

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| patl | nogenic organisms. |
|----------|---|
| (A) | Auto immunity |
| (B) | Complement |
| (C) | Hapten |
| D | Vaccine |
| (E) | Answer not known |
| | |
| 150. The | type of proteins that are synthesised in the liver during infection |
| (A) | Interferons |
| (B) | Lactoferricin |
| SOY | Cross reactive protein |
| (D) | Fibronectin |
| (E) | Answer not known |
| | |
| 151. Mu | mps is caused by a virus known as |
| (A) | Retrovirus |
| (B) | Herpesvirus |
| (C) | Myxovirus |
| | Paramyxovirus |
| (E) | Answer not known |
| | |
| 152. Leu | cocytes secrete |
| TAY CAY | Interleukins |
| (B) | Interferons |
| (C) | Prostaglandins |
| (D) | Heparin |
| (E) | Answer not known |
| | |
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149. The preparation of antigenic material used to induce immunity against

- 153. The subclass of IgG antibody that cannot pass through human placenta is (A) Ig G₁ (B) Ig G₂ (C) Ig G₃ (D) Ig G₄ (E) Answer not known 154. The immunity mediated by T-lymphocytes is called as Humoral immunity (A) Cell-mediated immunity (C) Innate immunity (D) Clonal selection (E) Answer not known 155. Name the scientist, who created swiss-port as a curated-protein
 - sequence database in 1986 (A) Amos Bairoch
 - (B) Stephen Ahschul
 - (C) Eugene Myers
 - (D) Webb Miller
 - (E) Answer not known
 - 156. The database consists of data in a single file in the form of rows and columns is called
 - (A) Secondary database
 - (B) Composite database
 - Flat-file database
 - (D) Relational database
 - Answer not known (E)

- 157. The correlation coefficient computed for two parameters measured in 429 patients is r = 0.829. This means that
 - (A) Two parameters are directly correlated and the link is weak-r is positive and close to 0.
 - (B) Two parameters are inversely correlated and the link is strong-r is negative and close to 1.
 - The two parameters are directly correlated and the link is strong-r is positive and close to 1.
 - (D) There are two few cases and we do not trust this coefficient value.
 - (E) Answer not known
- 158. Pick out the visual aid for presentation of statistical data
 - (A) Eyes and Ears
 - (B) Smart Boards
 - (C) Diagrams and Graphs
 - (D) Black Boards
 - (E) Answer not known
- 159. An upward slanted stroke which is indicated against each occurrence of value is a
 - (A) Arrow
 - (B) Comma
 - (C) Array
 - (D) Tally mark
 - (E) Answer not known

160. Find out the non-Qualitative data

(A) Height

- (B) Skin colour
- (C) Eye colour
- (D) Sex
- (E) Answer not known

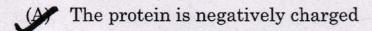
161. Standard deviation is

- (A) Root mean
- (B) Squared deviation
- (C) Root mean squared deviation
- (D) Quartile deviation
- (E) Answer not known

162. The concept of standard deviation was introduced by

- (A) L.H.C. Tippett
- (B) Taro Yamane
- (C) Karl Pearson
 - (D) Ya Lun Choe
 - (E) Answer not known

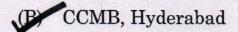
| 163. | pH-9 is | maintained | to | separate | protein | in | the | electrophoresis | sample |
|------|---------|------------|----|----------|---------|----|-----|-----------------|--------|
| | because | | | | | | | | |



- (B) The protein is positively charged
- (C) The protein is neutral charged
- (D) The protein is electrofocussed
- (E) Answer not known

164. In India, DNA fingerprinting tests are carried out at

(A) CDRI, Lucknow

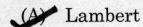


- (C) NII, New Delhi
- (D) IARI, New Delhi
- (E) Answer not known

165. Technique used for separation of DNA fragments from a sample is

- (A) Northern blotting
- (B) Southern blotting
- (C) Eastern blotting
- (D) Western blotting
- (E) Answer not known

166. When a ray of Monochromatic light passes through an absorbing medium, its intensity decreases exponentially as the length of absorbing medium increases who proposed this law?



- (B) Beer
- (C) Beer Lambert
- (D) James
- (E) Answer not known

167. Match the following:

- (a) Fixation
- 1. Canada balsam
- (b) Dehydration
- 2. Ethanol
- (c) Clearing
- 3. Bavin's solution
- (d) Mounting
- 4. Xylol
- (a) (b)
- (c)
 - (d)

3

1

- (4) 3
- 4 1
- (B) 1
- 4
- (C) 4
- 2

1

- (D) 2
- 3
- (E) Answer not known

4

3

168. The technique used to locate the radioactive isotopes in cells, tissues and organs

- (A) Chromatography
- Autoradiography
 - (C) Photography
 - (D) Partition Chromatography
 - (E) Answer not known

| 169. | The | bipinnaria larva of Asterias deve | elops fro | om the | zygote | in | about |
|------|------|--------------------------------------|-----------|--------|--------|----|-------|
| | | days. | | | | | |
| | (A) | 5 | | | | | |
| | (B) | 7 | | | | | |
| | (C) | 10 | | | | | |
| | (D) | 12 | | | | | |
| | (E) | Answer not known | | | | | |
| | | | | | | | |
| 170. | Dige | estive system in human is derived fr | rom — | la | yer. | | |
| | (A) | Mesoderm | | | | | |
| | (B) | Endoderm | | | | | |
| | (C) | Ectoderm | | 2 (x) | | | |
| | (D) | Epiderm | | | | | |
| | (E) | Answer not known | | | | | |
| | | | | | | | |
| 171 | Wh | ich is the larva of crab? | | | | | |
| | (A) | Cypris | | | (| | |
| | (B) | Alima | | | | | |
| | (2) | Megalopa | | | | | |
| | (D) | Phyllosoma | | | | | |
| | (E) | Answer not known | | | | | |
| | 3/ | | 100 | | | | |

172. Match the following:

- (a) Filter feeder
- Modified fans 1.

(b) Notopodia

- **Amphitrite** 2.
- (c) Tentacle feeding
- Arenicola 3.
- (d) L-shaped burrow
- Sabella 4.

- (a) (b)
- (d) (c)
- (A) 2 3
- 4 1
- (B) 3
- 2
- 2

- (D) 1
- 2 4

1

3

Answer not known (E)

4

1

3

173. A gas filled vesicle shaped zooid which helps in swimming

- Phyllozooids (A)
- (B) Nectocalyces
- (C) Pneumatophores
 - (D) Gonophores
 - Answer not known (E)

174. The liver rot disease in sheep is caused by

- Schistosoma (A)
- Taenia (B)
- Dugesia (C)
- Fasciola
 - Answer not known (E)

| 175. | The l | nighest degree of polymorphism is shown by the members of |
|------|-------|---|
| | (A) | Coronate |
| | (B) | Semaeostomeae |
| | (C) | Sipnonophora |
| | (D) | Trachylina |
| | (E) | Answer not known |
| 1.00 | | |
| 176. | The | exoskeleton of a polyp is called |
| | (A) | gastrozooids |
| | (B) | spicules |
| | (C) | corallum |
| | D | corallite |
| | (E) | Answer not known |
| | | |
| 177. | In n | nodern taxonomy, a taxon is a |
| | (A) | a group of animals of a species |
| | (B) | group of animals of a germs |
| | (0) | group of animals with district characters |
| | (D) | group of animals with same number of chromosomes |
| | (E) | Answer not known |
| | | |
| 178. | The | common shelled protozoans belong to |
| | (A) | Mastigophora |
| | (B) | Sporozoa |

(C) Ciliophora

Rhizopoda

(E) Answer not known

| 179 | Whic | ch cell of the parathyroid gland secrete parathormone? |
|------|------|---|
| | (A) | Chief cells |
| | (B) | Oxyntic cells |
| | (C) | Chromaffin cells |
| | (D) | Islets |
| | (E) | Answer not known |
| | | |
| 180. | | uman being at the age of 10 if two testes are removed which one of collowing will be inhibited? |
| | (A) | Infertility |
| | DY | Secondary sexual character |
| | (C) | Secretion of estrogen hormone |
| | (D) | Sex determining chromosome |
| | (E) | Answer not known |
| | | |
| 181. | Horn | mones of the Insects is |
| | (A) | Pheromones |
| | (B) | Thymin |
| | (C) | Luciferin |
| | (D) | Hippuric acid |
| | (E) | Answer not known |
| | | |
| 182. | | noreceptors which regulate osmotic pressure of extracellular fluid are |
| | | ent in |
| | (A) | kidney |
| | D | hypothalamus |
| | (C) | lungs |
| | (D) | brain |
| | (E) | Answer not known |

| 183. | A ch syna | nemical substance which transmits the nerve impulse through pse | | | | | | |
|------|--------------|---|--|--|--|--|--|--|
| | (A) | Acetic acid | | | | | | |
| | (B) | Acetal dehyde | | | | | | |
| | (0) | Acetyl choline | | | | | | |
| | (D) | Acetocarmine | | | | | | |
| | (E) | Answer not known | | | | | | |
| | | | | | | | | |
| 184. | The | The region of the ear which detects various sound frequencies | | | | | | |
| | (A) | Sacculus | | | | | | |
| | (B) | Utriculus | | | | | | |
| | (0) | Cochlea | | | | | | |
| | (D) | Ampulla | | | | | | |
| | (E) | Answer not known | | | | | | |
| | | | | | | | | |
| 185. | The | The percentage of protein in skeletal muscle | | | | | | |
| | (A) | 10% | | | | | | |
| | (B) | 20% | | | | | | |
| | (C) | 30% | | | | | | |
| | (D) | 50% | | | | | | |
| | (E) | Answer not known | | | | | | |
| | | | | | | | | |
| 186. | Res | piratory capacity of human blood is ———— of oxygen. | | | | | | |
| | (A) | 0.393 ml | | | | | | |
| | B | 1.34 ml | | | | | | |
| | (C) | 13.4 ml | | | | | | |
| | (D) | 19.43 ml | | | | | | |
| | (E) | Answer not known | | | | | | |
| | | | | | | | | |

| 187. In | sickle cell anemia the | B-chain of ha | emoglobin is | substituted by |
|---------|------------------------|---------------|--------------|----------------|
| | ——— instead of gluta | mic acid. | | |
| JAY | Valine | | | |
| (B) | Threonine | | | |
| (C) | Isoleucine | | | |
| (D) | Histidine | | | |
| (E)_ | Answer not known | | | |
| | | | | |

- 188. ABO blood group was discovered by
 - (A) Emerson
 - (P) Karl Landsteiner
 - (C) McClintock
 - (D) Bridges
 - (E) Answer not known
- 189. The molecular weight of haemoglobin is
 - (A) 64,500 Daltons
 - (B) 60,500 Daltons
 - (C) 61,500 Daltons
 - (D) 62,000 Daltons
 - (E) Answer not known
- 190. Hormone secreted by interstitial cells of testes
 - (A) Estrogen
 - (P) Testosterone
 - (C) Glucagon
 - (D) Progesterone
 - (E) Answer not known

| 101 | Food | back inhibition of an enzymatic reac | tion is caused by | | | | | | |
|-----------|--|--------------------------------------|---------------------|--|--|--|--|--|--|
| 191. | 1000 | End product | bioir is cause a sy | | | | | | |
| | (B) | Substrate | | | | | | | |
| | | | | | | | | | |
| | (C) (D) | Enzyme Rise in temperature | | | | | | | |
| | | | | | | | | | |
| | (E) | Answer not known | | | | | | | |
| | | | | | | | | | |
| 192. | 192. The capacity of human gall bladder is about | | | | | | | | |
| | (A) | 10 ml | | | | | | | |
| | (B) | 20 ml | | | | | | | |
| | (0) | 50 ml | | | | | | | |
| | (D) | 100 ml | | | | | | | |
| | (E) | Answer not known | | | | | | | |
| | | | | | | | | | |
| 193. | Mat | ch the following: | | | | | | | |
| | (a) | Vitamin B ₁₂ 1. Ribofla | avin | | | | | | |
| ## 1 * | (b) | Vitamin B ₆ 2. Cyano | cobalamin | | | | | | |
| | (c) | Vitamin B ₂ 3. Thiam | in | | | | | | |
| | (d) | Vitamin B ₁ 4. Pyrido | xine | | | | | | |
| | | 5. Thymin | ne | | | | | | |
| | | (a) (b) (c) (d) | | | | | | | |
| | (A) | 2 4 1 3 | | | | | | | |
| | (B) | 4 2 3 1 | | | | | | | |
| | (C) | 2 4 1 5 | | | | | | | |
| r s | (D) | 3 2 4 1 | | | | | | | |
| | (E) | Answer not known | | | | | | | |

- 194. Organisms living on the bottom of the sea, lake and deep water bodies are called

 (A) Nekton

 (B) Nanoplankton

 (C) Macroplankton
 - Benthos
 - (E) Answer not known
- 195. The quietest sound that the human ear can detect is called
 - (A) Decibel
 - (B) Bregoil
 - Threshold of hearing
 - (D) Sense of hearing
 - (E) Answer not known
- 196. Marsh gas is otherwise called as
 - (A) Methane
 - (B) Carbon di-oxide
 - (C) Carbon monoxide
 - (D) Nitrogen
 - (E) Answer not known

| 198. | Ozor | ne in lower atmosphere is an exam | ple of | |
|------|--------|---------------------------------------|----------|---|
| | (A) | Primary pollutant | | |
| | (B) | Not a pollutant | | |
| | (C) | Tertiary pollutant | | |
| | DY | Secondary pollutant | | |
| | (E) | Answer not known | | |
| | | | | |
| 199. | Bho | pal gas Tragedy occured in | | |
| | W | December 2, 1984 | | |
| | (B) | December 2, 1986 | | |
| | (C) | December 2, 1988 | | |
| | (D) | December 2, 1982 | | |
| | (E) | Answer not known | | |
| | | | | |
| 200 | . 'Par | nthero leo persica' is the zoological | name for | |
| | (A) | The wild ass | | |
| | (B) | Rhinoceros | | |
| | (C) | Cheetah | | |
| | DY | The Asiatic Lion | | |
| | (E) | Answer not known | | |
| | | | | |
| | | | | |
| ZOI | PG/202 | 22 60 | | ω |
| | | | | |
| | | | | |

197. The preservation of species under artificial conditions, such as zoos,

aquariums

(C) ecotourism

(D) entrophication

(E) Answer not known

(A) ex situ conservation

in situ conservation

SEAL