INSTRUCTIONS TO CANDIDATES

(Use only blue/black ball-point pen in the space above and on both sides of the Answer Sheet)

1. Within 30 minutes of the issue of the Question Booklet, check the Question Booklet to ensure that it contains all the pages in correct sequence and that no page/question is missing. In case of faulty Question Booklet bring it to the notice of the Superintendent/Invigilators immediately to obtain a fresh Question Booklet.

2. Do not bring any loose paper, written or blank, inside the Examination Hall except the Admit Card without its envelope.

3. A separate Answer Sheet is given. It should not be folded or mutilated. A second Answer Sheet shall not be provided. Only the Answer Sheet will be evaluated.

4. Write your Roll Number and Serial Number of the Answer Sheet by pen in the space provided above.

5. On the front page of the Answer Sheet, write by pen your Roll Number in the space provided at the top and by darkening the circles at the bottom. Also, wherever applicable, write the Question Booklet Number and the Set Number in appropriate places.

6. No overwriting is allowed in the entries of Roll No., Question Booklet no. and Set no. (if any) on OMR sheet and Roll No. and OMR sheet no. on the Question Booklet.

7. Any change in the aforesaid entries is to be verified by the invigilator, otherwise it will be taken as unfair means.

8. Each question in this Booklet is followed by four alternative answers. For each question, you are to record the correct option on the Answer Sheet by darkening the appropriate circle in the corresponding row of the Answer Sheet, by pen as mentioned in the guidelines given on the first page of the Answer Sheet.

9. For each question, darken only one circle on the Answer Sheet. If you darken more than one circle or darken a circle partially, the answer will be treated as incorrect.

10. Note that the answer once filled in ink cannot be changed. If you do not wish to attempt a question, leave all the circles in the corresponding row blank (such question will be awarded zero marks).

11. For rough work, use the inner back page of the title cover and the blank page at the end of this Booklet.

12. Deposit only OMR Answer Sheet at the end of the Test.

13. You are not permitted to leave the Examination Hall until the end of the Test.

14. If a candidate attempts to use any form of unfair means, he/she shall be liable to such punishment as the University may determine and impose on him/her.

Total No. of Printed Pages: 32
16P/216/22
No. of Questions : 150
Time : 2 Hours
Full Marks : 450

Note : (1) Attempt as many questions as you can. Each question carries 3 (Three) marks. One mark will be deducted for each incorrect answer. Zero mark will be awarded for each unattempted question.
(2) If more than one alternative answers seem to be approximate to the correct answer, choose the closest one.

01. Water is a very efficient thermal buffer, because :
   (1) Its high heat capacity
   (2) Concentration of more salt
   (3) Low surface tension
   (4) Dissolve many organic matters

02. Macroherbivory is best illustrated by :
   (1) Protozoan
   (2) Insect
   (3) Moluccas
   (4) Echinodermata

03. Life cycle of monocystis includes
   (1) Gametogony and Sporogony
   (2) Schizogony and Gametogony
   (3) Syzygy and Gametogony
   (4) Sporogony only

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04. Leech is blood sucking animal nutritionally therefore leech is :
   (1) Sangivorous  (2) Omnivorous
   (3) Herbivorous  (4) Carnivorous

05. Gastric filament occur in :
   (1) Hormiphora  (2) Aurelia
   (3) Obelia      (4) Sea anemone

06. Sense organ of Aurelia is called :
   (1) Tentaculocytes (2) Tester
   (3) Tentilla      (4) Nematocyst

07. Groove of Pharynx is called :
   (1) Stomodaeum   (2) Limbus
   (3) Siphonoglyph (4) Chidoglandular groove

08. Bladder worm is found in :
   (1) Human muscle (2) Muscle of pig
   (3) Human faeces (4) Soil

09. Final moult in life cycle of Ascaris takes place in :
   (1) Soil        (2) Lung
   (3) Intestine   (4) Intestine before migration
10. How many chambers are found in the crop of Leech?
   (1) Six           (2) Eight
   (3) Nine          (4) Ten

11. Malphighian tubules of Cockroach are responsible for:
   (1) Excretion     (2) Osmoregulation
   (3) Digestion     (4) Respiration

12. Redula is found in all molusca except:
   (1) Bivalves      (2) Cephalopoda
   (3) Scaphopoda    (4) Aplacophora

13. Locomotry organ of starfish is:
   (1) Podia         (2) Polian Vesicles
   (3) Stome canal   (4) Ampullae

14. Respiratory organ in Holothuria is:
   (1) Papulae       (2) Dermal Branchiae
   (3) Respiratory tree (4) Bursae

15. The Excretory structure in Peripatus is:
   (1) Malphighian tubules (2) Coxal Gland
   (3) Nephridia          (4) Solenocytes
16. Brachiolaria larva is the example of class:
   (1) Crinoidae
   (2) Asteroidea
   (3) Echinoidea
   (4) Holothuridea

17. An example of wood boring molluscs is:
   (1) Pholas
   (2) Aviculus
   (3) Teredo
   (4) Trigonic

18. Which of the following is connected with Coral Formation?
   (1) Halistemma
   (2) Millepora
   (3) Adamsia
   (4) Rhizostoma

19. The scientific name of precious Red Coral is:
   (1) Zubipore
   (2) Fungia
   (3) Heliopora
   (4) Corallium

20. Skeleton of Demospongia is made up with:
   (1) Silicious
   (2) Calcareous
   (3) Spongine fibres
   (4) Both spongine fibre and Silicious fibre
21. The number of Comb Plate is present in Hormiphore:
   (1) 8  (2) 6  (3) 10  (4) 12

22. Obelic is a:
   (1) Polymorphic  (2) Dimorphic
   (3) Trimorphic    (4) Monomorphic

23. Planaria is included under the order:
   (1) Polycladea  (2) Digenea
   (3) Monogenea   (4) Tricladea

24. The origin of the Nephridium is:
   (1) Germinal  (2) Ectodermal
   (3) Mesodermal (4) Endodermal

25. Ephyra is the larva of:
   (1) Beroe    (2) Aurelia
   (3) Ctenophana (4) Coeloplane

26. Uterus is primates is:
   (1) Simplex type  (2) Bipartite type
   (3) Bicarnuate type (4) Duplex type
27. The dentine part of Placoid scale is secreted by:

(1) Osteoblast cells  
(2) Choanoblast cells
(3) Odontoblast cells  
(4) Chondrioblast cells

28. Which of the following are branches of VII and X cranial nerves?

(1) Glassopharyngeal and Hyomandibular
(2) Palatinus and Buccalis
(3) Abducens and Buccalis
(4) Ophthalmicus superficialis and Branchialis

29. In Teleost fishes, Ventral Aorta supplies blood to:

(1) Gills through Afferent branchial arteries and contains deoxygenated blood
(2) Gills through Afferent branchial arteries and contains oxygenated blood
(3) Gills through Efferent branchial arteries and contains oxygenated blood
(4) All parts of body through its branches

30. The type of jaw suspensorium in sharks is:

(1) Autodiastyle  
(2) Amphistylic
(3) Hyostyle  
(4) Streptostyle
31. In mammals, the thick roof called Neopallium is part of:
   (1) Cerebrum          (2) Cerebellum
   (3) Pons             (4) Medulla Oblongata

32. The type of tail (caudal fin) in sharks is:
   (1) Diphycercal        (2) Heterocercal
   (3) Homocercal         (4) Isocercal

33. A vertebra having Centrum convex at the anterior end and concave at
     posterior end is known as:
   (1) Opisthocoelous      (2) Amphicoelous
   (3) Procoelous          (4) Heterocoelous

34. Which one is a free swimming, pelagic and neotenic Urochordate
     animal?
   (1) Doliolium          (2) Salpa
   (3) Oikopleura         (4) Pyrosoma

35. Third, fourth and sixth aortic arches are present in:
   (1) Sharks            (2) Dipnoi
   (3) Teleosts          (4) Lizard

36. Neuromast organs in fishes are useful as:
   (1) Current receptors  (2) Touch receptors
   (3) Thermoreceptors    (4) Electroreceptors

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37. Crocodilians possess:

   (1) Archinephric kidney          (2) Pronephric kidney
   (3) Mesonephric kidney           (4) Metanephric kidney

38. Which of the following animal species possesses single median nasal opening, pouched gills, absence of paired fins and circular mouth?

   (1) *Latimeria chalumnae*          (2) *Catla catla*
   (3) *Petromyzon marinus*           (4) *Amphipnous cuchia*

39. Ductus caroticus is found in:

   (1) Amphibia                      (2) Reptilia
   (3) Birds                         (4) Mammals

40. A true air circulation in lungs is the feature of:

   (1) Amphibians                   (2) Reptiles
   (3) Birds                        (4) Mammals

41. Power of memory and learning in birds resides in:

   (1) Cerebral cortex              (2) Corpus striatum
   (3) Hyperstriatum                (4) Lateral ventricle

42. Projected gill septum is found in:

   (1) Cat fish                     (2) *Amia*
   (3) Paddle fish                  (4) Sharks
43. Which of the following is surviving Chondrichthyes?
   (1) Cladoselachi  (2) Holocephali
   (3) Paraselachi  (4) Pleuracanthodi

44. Accessory respiratory organs in *Clarias batrachus* are in the form of:
   (1) Labyrinthiform organs  (2) Arborescent organs
   (3) Air sacs  (4) Vascular Skin

45. In ruminant mammals, the different chambers of stomach fall in the sequence of:
   (1) Abomasum, Rumen, Omasum and Reticulum
   (2) Rumen, Reticulum, Abomasum and Omasum
   (3) Rumen, Reticulum, Omasum and Abomasum
   (4) Rumen, Omasum, Reticulum and Abomasum

46. Which type of primary sex determination mechanism is followed in human?
   (1) X : A ratio determines the sex
   (2) Presence of one or two X chromosome determines the sex
   (3) Y-chromosome determines sex
   (4) Haplo-diploidy during early embryonic development determines sex

47. An allele is considered dominant if its phenotype is expressed:
   (1) Only in heterozygous condition
   (2) In homo as well as heterozygous condition
   (3) *Only in homozygous condition*
   (4) Only in hemizygous condition
48. A maximum frequency of recombination in a given point that can occur is:
   (1) 100%   (2) 75%   (3) 50%   (4) 25%

49. Somatic recombination in immunoglobulin genes account for:
   (1) Class switching
   (2) Allelic exclusion
   (3) Affinity maturation
   (4) Increased expression of IgG gene

50. What organelle processes and packages proteins before sending them out of cell during secretion?
   (1) Outer membrane of nucleus
   (2) Endoplasmic reticulum
   (3) Golgi complex
   (4) Plasma membrane

51. Which of the following cell organelle is associated with a protein skeleton composed of lamins?
   (1) Mitochondrion
   (2) Chloroplast
   (3) NOR
   (4) Nucleus

52. In which phase of cell cycle DNA becomes 2C from 4C?
   (1) S
   (2) GI
   (3) Metaphase
   (4) Anaphase
53. In a centrifuge separation of suspended particles is done by:
   (1) Centrifugal force  (2) Centripetal force
   (3) Gravitational force  (4) Buoyant density

54. If you wish to study the region of binding of transcription factor in promoter DNA which of the following technique will be most appropriate?
   (1) Microarray  (2) Immunoprecipitation
   (3) Chromosome walking  (4) DNA footprinting

55. Which one of the following cell types does not divide in adult organisms?
   (1) Primary germ cells  (2) Neurons
   (3) Intestinal epithelium  (4) Corneal epithelium

56. During meiosis when a cell actually becomes haploid?
   (1) At the end of second division
   (2) During recombination in pachytene
   (3) During chiasmata terminalization at diakinesis
   (4) At the end of first division

57. Most of the membrane lipids are synthesized on
   (1) Rough endoplasmic reticulum
   (2) Nucleolus
   (3) Smooth endoplasmic reticulum
   (4) None of the above
58. A nucleosome is made up of:
   (1) Histones (H2A, H2B, H3, H4) and 146 bp of DNA
   (2) Histones (H1, 2 molecules each of H2A, H2B, H3, H4) and 146 bp of DNA
   (3) Histones (H1, 2 molecules each of H2A, H2B, H3, H4) and 200 bp of DNA
   (4) Histones (H2A, H2B, H3, H4) and linker DNA

59. For a given gene, a diploid individual will contain:
   (1) two alleles
   (2) one allele
   (3) multiple alleles
   (4) two genes

60. Which law of Mendel is revealed by a monohybrid cross?
   (1) Law of dominance
   (2) Law of segregation
   (3) Law of independent assortment
   (4) Law of heterosis

61. Migration of cancerous cells from the place of their origin to another place of the body is termed as:
   (1) Metastasis
   (2) Diapedesis
   (3) Necrosis
   (4) Apoptosis

62. Which of the following enzymes is used for synthesizing cDNA?
   (1) DNA methylase
   (2) DNA topoisomerase
   (3) Reverse transcriptase
   (4) Restriction endonucleases
63. Which of the following is an example of transformation of chemical energy to light energy?
   (1) Bioluminescence  (2) Autoradiography  
   (3) Muscle contraction  (4) Ion transport

64. The treatment of snake-bite by antivenom is an example of:
   (1) artificially acquired passive immunity  
   (2) naturally acquired passive immunity  
   (3) innate immunity  
   (4) adaptive response

65. The most abundant class of antibodies in milk is:
   (1) IgM  (2) IgD  (3) IgG  (4) IgA

66. Which of the following term is not quantitatively assesses?
   (1) Penetrance  (2) Expressivity  
   (3) Map distance  (4) Probability

67. The following pedigree show inheritance of an autosomal trait

![Pedigree Diagram]

Which of the following conclusion can be drawn from this pedigree?
   (1) The trait is dominant  (2) The trait is semi-dominant 
   (3) The trait is recessive  (4) The chart is inconclusive
68. How the gene flow between two Mendelian populations is prevented?
   (1) By mutation  (2) By mimicry
   (3) By recombination (4) By isolating mechanisms

69. Which one of the following is a classical example of protective mimicry?
   (1) Drosophila  (2) Kallima
   (3) Apis  (4) Neurospora

70. Which factor is important for the maintenance of genetic equilibrium?
   (1) Migration  (2) Adaptation
   (3) Natural selection  (4) Panmixia

71. A very good example of living fossil is:
   (1) Chameleon  (2) Sphenodon
   (3) Hylodermis  (4) Mabuia

72. Which one is called as missing link?
   (1) Macropus  (2) Manis
   (3) Pteropus  (4) Archeopteryx

73. Polyploidy has played important role in evolution in:
   (1) Plants  (2) Animals
   (3) Bacteria  (4) Viruses
74. Name the evolutionary biologist who integrated evolution with genetics:
   (1) Hardy  (2) Dohzhansky
   (3) Darwin  (4) Lamark

75. Paripatus is a connecting link between:
   (1) Mollusca and Arthropoda
   (2) Arthropoda and Annelida
   (3) Annelida and Mollusca
   (4) Protozoa and Echinodermata

76. Which one of the following is a Non-directional force of evolution?
   (1) Sewall wright effect  (2) Migration
   (3) Variation  (4) Mimicry

77. Mutations play important role in evolution. This fact was realized for the first time by:
   (1) Wagner  (2) Weismann
   (3) Haldane  (4) Devries

78. Mesychippus was found in:
   (1) Eocene  (2) Oligocene
   (3) Miocene  (4) Pliocene
79. "Ontogeny recapitulates phylogeny" was formulated by:

   (1) Weinberg        (2) Huxley
   (3) Spencer         (4) Haeckel

80. There are different types of reproductive isolation mechanisms. Which type of reproductive isolation is postmating as well as prezygotic:

   (1) Gametic isolation    (2) Sexual isolation
   (3) Ecological isolation  (4) Seasonal isolation

81. The number of toes in Eohippus is:

   (1) 1               (2) 2               (3) 3               (4) 4

82. The method by which the dating of rocks containing fossils is done is known as:

   (1) Herpetology       (2) Geochronology
   (3) Chronobiology    (4) Zoogeography

83. Which is the commonest method of fossilization?

   (1) Compression       (2) Petrification
   (3) Formation of moulds (4) Impression
84. Fossils of birds have been found in the rocks deposited in:

(1) Cambrian period  (2) Jurassic period
(3) Silurian period  (4) Carboniferous period

85. When two species are morphologically similar and reproductively isolated, they are called as?

(1) Incipient species  (2) Subspecies
(3) Sibling species  (4) Polytypic species

86. The problem of hybrid sterility was discussed for the first time in detail by Aristotle in:

(1) Human  (2) Mule
(3) Eoat  (4) Sea Urchins

87. There are different concepts of species. Which one is the most widely accepted concept of species?

(1) Biological species concept  (2) Typological species concept
(3) Evolutionary species concept  (4) Nominalistic species concept

88. Due to founder effect in a population, the degree of genetic variability:

(1) Is similar to original population
(2) Remains constant
(3) Is increased
(4) Is reduced
89. $pK$ values of $\alpha$-amino acids are measured in terms of:
   (1) $pH$          (2) $K_a$
   (3) Net-ve charge (4) Net+ve charge

90. $\alpha$-helix structure of a protein is mainly stabilized by:
   (1) Disulphide bonds
   (2) Ionic bonds
   (3) Hydrogen bonds involving C=O and NH of different peptide bond
   (4) Hydrogen bonds involving R-groups of different amino acids

91. A protein domain represents a:
   (1) Tertiary structured unit (2) Quaternary structured unit
   (3) Secondary structure    (4) Random coiled unit

92. $K_m$ of an enzyme is a constant expressed in terms of:
   (1) Substrate concentration (2) Equilibrium constant
   (3) Rate of the reaction catalyzed (4) Turnover number

93. Citrate is not a structural analogue of the substrate for the enzyme phosphofructokinase-1 but it inhibits activity of this enzyme. This could be an example of the enzyme regulation due to:
   (1) Allosteryism
   (2) Reversible covalent modification
   (3) Irreversible covalent modification
   (4) Irreversible non-covalent modification
94. Kinases represent a sub-class under which of the major classes of the enzymes:

(1) Oxido-reductases  (2) Transferases
(3) Lyases  (4) Isomeras 

95. Which of the following best represents a heteropolyascharide?

(1) Poly N-acetylglicosamine  (2) Poly glucuronic acid
(3) Poly galactosamine  (4) Poly Glycosamino-glycans

96. α-D glucose and β-D glucose are:

(1) Epimers  (2) Anomers
(3) Enantiomers  (4) Cis-trans isomers

97. The glycolytic product enters into TCA cycle in the form of:

(1) Citrate  (2) Pyruvate
(3) Oxaloacetate  (4) Acety-Co-A

98. Which one is not an intermediate of the TCA cycle?

(1) Thiosuccinate  (2) Succinate
(3) Succinyl-Co-A  (4) Aconitate

99. Which one serves as catalytic sub unit of mitochondrial ATP synthase?

(1) α sub unit of Fo domain  (2) β sub unit of Fo domain
(3) α sub unit of F1 domain  (4) β sub unit of 1 domain
100. In Chemi-Osmotic mechanism of mitochondrial ATP synthesis, which one serves as coupling factor between oxidation and ADP phosphorylation?

(1) Protons  (2) Electrons  
(3) Phosphates  (4) NADH

101. Which one is a constituent of simple lipids?

(1) Glycerol  (2) Glycerate  
(3) Glyceraldehyde  (4) Glyceracetates

102. The two strands of DNA are held together by:

(1) Phosphodiester bonds  (2) Phosphoanhydride bonds  
(3) Hydrogen bonds  (4) C - C covalent bonds

103. A 'syn' oriented base can be found in a:

(1) A-DNA  (2) B-DNS  
(3) Z-DNA  (4) Triple helix

104. A double stranded DNA assumes helix conformation but double stranded RNA makes non-helical Stem structure. This is mainly due to presence of:

(1) 2'-OH in ribose of RNA  (2) U in place of T in RNA  
(3) Modified bases in RNA  (4) 'Syn' oriented bases in RNA

105. 'SNURPS' (SnRNPs) are involved in making:

(1) Nucleosomes  (2) Primosomes  
(3) Apoptosomes  (4) Spliceosomes
106. Promoter of a gene is reported to be present at -35 position. That means this sequence is located at:
(1) Downstream region
(2) Upstream region
(3) Transcription start site
(4) Trans-acting element of the gene

107. The smallest peptide hormone is:
(1) TSH    (2) TRH    (3) FSH    (4) ACTH

108. Which is not a glycoprotein hormone?
(1) FSH    (2) LH    (3) ACTH    (4) TSH

109. Presence of which hormone in the urine is used as the most common test for pregnancy?
(1) LCG    (2) FSH    (3) STH    (4) Estrogen

110. The three layers of adrenal cortex in correct sequence are:
(1) Zona granulosa, Zona fasciulata, Zona reticularis
(2) Zona fasciulata, Zona glomerulosa, Zona reticularis
(3) Zona glomerulosa, Zona granulosa, Zona fasciulata
(4) Zona glomerulosa, Zona fasciulata, Zona reticularis

111. Rathke's pouch is associated with development of:
(1) Pituitary gland    (2) Pineal gland
(3) Parathyroid gland    (4) Pancreatic islets
112. Melatonin is synthesized from:
   (1) Tyrosine  (2) Tryptophan
   (3) Melanin  (4) Histamine

113. According to two-cell theory of estrogen production, androgens are aromatized to estrogen in:
   (1) Thecal cells  (2) Granulosa cells
   (3) Chief cells  (4) Leydig cells

114. Deficiency of which hormone results in diabetes insipidus?
   (1) Oxytocin  (2) Vasopressin
   (3) Prolactin  (4) Insulin

115. Which one is not a hormone of adenohypophysis?
   (1) ACTH  (2) ADH
   (3) FSH  (4) MSH

116. Secretion of which hormone from pars distalis is increased during stress?
   (1) ACTH  (2) FSH
   (3) TSH  (4) STH

117. Somatostatin (SST) is secreted by pancreatic:
   (1) A cells  (2) B cells
   (3) D cells  (4) F cells
118. Secretion of which hormone from adenohypophysis is under an inhibitory control by the hypothalamus?

(1) MSH  (2) TSH
(3) FSH  (4) ACTH

119. Which one is not a peptide hormone?

(1) Insulin  (2) Epinephrine
(3) Oxytocin  (4) Inhibin

120. Slow block to polyspermy resulting in removal of sperms from vitelline membrane is accomplished by:

(1) Change in membrane potential
(2) Cortical reaction
(3) Acrosomal reaction
(4) ZP1 interaction

121. Xenopus gastrulation is initiated in the region:

(1) Opposite to the point of sperm entry
(2) Near the vicinity of sperm entry
(3) Middle of animal pole
(4) At the tip of posterior pole

122. Grey crescent of frog embryo represents the future:

(1) Anterior side of developing embryo
(2) Posterior side of developing embryo
(3) Ventral side of developing embryo
(4) Dorsal side of developing embryo
123. Which one of the following is not relevant to cleavage divisions?
   (1) The daughter cells are smaller in size than the mother cell
   (2) There is no growth in the volume of the embryo
   (3) The embryo rapidly grows in size as the cell increase in number
   (4) The divisions are rapid compared to mitotic division

124. Hensen's node is formed during gastrulation of:
   (1) Amphibians  (2) Mammals
   (3) Sea urchin  (4) Birds

125. If due to mutation of a gene hind limb gets transformed into fore limb, such transformations are named as:
   (1) Polarity defect mutation  (2) Transversion
   (3) Transition  (4) Homeotic transformation

126. A fluid filled cavity formed during cleavage divisions in amphibian embryos is known as:
   (1) Blastula  (2) Blastocoei
   (3) Blastodisc  (4) Blastopore

127. The ability of a cell or tissue to respond to a specific induction signal is known as:
   (1) Determination  (2) Specification
   (3) Competence  (4) Differentiation

128. The ability of cells to achieve their respective fates by themselves without the influence of neighbouring cells is called as:
   (1) Autonomous specification
   (2) Conditional specification
   (3) Syncytial specification
   (4) Non conditional specification
129. Insect embryos undergo:
   (1) Rotational cleavage forming syncytium
   (2) Spiral cleavage forming cells of unequal sizes
   (3) Superficial cleavage forming syncytium
   (4) Gastrulation without cleavage divisions

130. The dorsal most vegetal cells of blastula which are capable of inducing the organizer is called as:
   (1) Hensen’s node
   (2) Primitive groove
   (3) Inducer
   (4) Nieuwkoop centre

131. If the dorsal blastopore lip tissue of Xenopus embryo is transplanted into the ventral side of another embryo then:
   (1) A secondary axis is formed in the transplanted embryo and develops into twins
   (2) The transplanted tissue becomes part of the ventral tissue and a normal embryo develops
   (3) Such transplants are rejected
   (4) Such embryos die

132. Embryonic stem cells of mammals are derived from:
   (1) Trophectoderm
   (2) Inner cell mass
   (3) The gametes
   (4) Blastocoels

133. The most abundant greenhouse gas is:
   (1) methane
   (2) carbon dioxide
   (3) water vapour
   (4) nitrous oxide

134. Which one of the following animals has become extinct in India?
   (1) cheetah
   (2) snow leopard
   (3) one horned rhinoceros
   (4) great Indian bustard
135. Which one of the following does not show cooperative hunting?

(1) hyenas   (2) lions
(3) wild dogs (4) tigers

136. An interaction involving 2-species populations when species A benefits and species B is not affected is know as:

(1) neutralism   (2) amensalism
(3) commensalism (4) proto cooperation

137. Communication involving stridulation is found in:

(1) moths   (2) butterflies
(3) crickets (4) flies

138. Locusts exhibit both solitary and gregarious phases. Young locusts reared in isolation exhibit moderate activity levels while hoppers reared under crowded conditions engage in long flights. Adult locusts that develop from solitary locusts retain prothoracic glands but these are absent from adults that develop from gregarious hoppers. Which one of the following techniques can be used to reduce the general activity of the gregarious hoppers?

(1) autoradiography and cytoimmunochemistry
(2) radioimmunoassay
(3) transplantation
(4) administration of antibodies against the specific hormone

139. Which of the following does not involve agonistic interactions?

(1) territorial behaviour
(2) dominance behaviour
(3) disciplinary action by parents during weaning
(4) predatory behaviour

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140. Which of the following method is not used in the field of behavioural genetics?
   (1) cross-fostering experiments
   (2) quantitative trait locus analysis
   (3) artificial selection technique
   (4) blood transfusion

141. A chemical used for intraspecific communication is known as:
   (1) an allomone
   (2) a pheromone
   (3) a kairomone
   (4) a synomone

142. Which one of the following is the earliest type of communication channel, from an evolutionary viewpoint?
   (1) tactile
   (2) olfactory
   (3) visual
   (4) auditory

143. Which one of the following is not a society?
   (1) a group of flies on a ripe banana
   (2) an ant colony
   (3) a herd of elephants
   (4) a vampire bat colony

144. When an unpalatable species mimics another unpalatable species it is known as?
   (1) Batesian mimicry
   (2) wasmannian mimicry
   (3) aggressive mimicry
   (4) Mullerian mimicry

145. Study of learning phenomenon involving stimulus-stimulus pairing is a characteristic feature of:
   (1) operant conditioning
   (2) classical conditioning
   (3) learning sets
   (4) habituation
146. If two organisms are in the same phylum, they must also be in the same:

1. Species
2. Class
3. Kingdom
4. Family

147. Which one of the following is known to give Biological species concept?

1. Mayr
2. Darwin
3. Linnaeus
4. Candolle

148. Origin of species due to geographical isolation is referred as:

1. Sympatric speciation
2. Allopatric speciation
3. Parapatric speciation
4. Peripatric speciation

149. In case of Bombyx mori, silk thread is made from:

1. Subcutaneous layer of larva
2. Subcutaneous layer of adult
3. Salivary glands of larva
4. Salivary glands of adult

150. Pebrine is a disease caused by protozoan parasite affecting:

1. Apiculture
2. Sericulture
3. Lac culture
4. Pisciculture
ROUGH WORK
रूढ़ कार्य
अभ्यासियों के लिए निर्देश

(इस पुस्तिका के प्रथम आवरण पृष्ठ पर तथा उत्तर-पत्र के दोनों पृष्ठों पर केवल नीली-काली बाल-वैडेट पेन से ही लिखिए)

1. प्रश्न पुस्तिका मिलने के 30 मिनट के अन्दर ही देख लें कि प्रश्नपत्र में सभी पृष्ठ मौजूद हैं और कोई प्रश्न छूटा नहीं है। पुस्तिका दोषपूरक पंजीयन पर प्रश्नपत्र के तत्काल क्षण-निरीक्षक को देकर सम्पूर्ण प्रश्नपत्र की दूसरी पुस्तिका शास्त्र करे।

2. परीक्षा भवन में लिफाफा रहित प्रश्न-पत्र के अतिरिक्त, लिखा या सादा कोई भी खुला कागज साथ में न लायें।

3. उत्तर-पत्र अलग से दिया गया है। इसे न तो ठोसे और न ही विकृत करें। दूसरा उत्तर-पत्र नहीं दिया जाएगा। केवल उत्तर-पत्र का ही मूल्यांकन किया जाएगा।

4. अपना अनुसरणकार्य तथा उत्तर-पत्र का क्रमांक प्रथम आवरण-पृष्ठ पर पेंस ने पर निर्दिष्ट वस्त्रादि पर लिखें।

5. उत्तर-पत्र के प्रथम पृष्ठ पर पेंस से अपना अनुसरणकार्य निर्दिष्ट वस्त्रादि पर लिखें तथा नीचे दिये वृत्तियाँ को गाढ़ा कर दें। जहाँ- जहाँ आवश्यक हो वहाँ प्रश्न-पुस्तिका का क्रमांक तथा सेट का नम्बर उचित वस्त्रादि पर लिखें।

6. ओप एम ओ आर पत्र पर अनुसरणकार्य संख्या, प्रश्नपुस्तिका संख्या व सेट संख्या (यदि कोई हो) तथा प्रश्नपुस्तिका पर अनुसरणकार्य और ओप एम ओ आर पत्र संख्या की प्रश्नावली में उपरिलिखित की अनुमति नहीं है।

7. उपयुक्त प्रश्नावलियों में कोई दक्षिण निरीक्षक डरो-प्रमाणित होना चाहिए। अन्यथा यह एक अनुचित संपत्ति का प्रयोग माना जायेगा।

8. प्रश्न-पुस्तिका में प्रश्न के बारे में बौद्धिक उत्तर दिये गये हैं। प्रश्न के बौद्धिक उत्तर के लिए आपको उत्तर-पत्र की सामर्थ्य प्रमाण के साथ दिये गये वृत्तियाँ को उत्तर-पत्र के प्रथम पृष्ठ पर दिये गये नियमों के अनुसार पेंस से गाढ़ा करना है।

9. प्रश्न के उत्तर के लिए केवल एक ही वृत्ति को गाढ़ा करें। एक से अधिक वृत्तियाँ को गाढ़ा करने पर अवश्य एक वृत्ति की अपूर्णता पर यह उत्तर गलत माना जायेगा।

10. द्वारा दूर कि एक दूसरा विश्वसनीय उत्तर बदलना नहीं हो सकता है। यदि आप किसी प्रश्न का उत्तर नहीं देना चाहते हैं, तो सांबंधित प्रश्न के साथ दिये गये सभी वृत्तियाँ को खाली छोड़ दें। ऐसे प्रश्नों पर शुरू अंक दिये जायेंगे।

11. यह कार्य के लिए प्रश्न-पुस्तिका के मुखपृष्ठ के अंदर बाला पृष्ठ तथा उत्तर-पुस्तिका के अंतिम पृष्ठ का प्रयोग करें।

12. परीक्षा के उपरान्त केवल ओ एम ओ आर उत्तर-पत्र परीक्षा भवन में जमा कर दें।

13. परीक्षा समाप्त होने से पहले परीक्षा भवन से बाहर जाने की अनुमति नहीं होगी।

14. यदि कोई अपराध परीक्षा के अनुसरणित साधनों का प्रयोग करता है, तो वह लिखेतिकायाकाय द्वारा निर्धारित दंड का/की, भागी होगा/होगी।