Msc Zoology

15P/216/2

Question Booklet No. 3641

(To be filled up by the candidate by blue/black ball-point pen)

Roll No. | | | | | | | | | |

Code no 484

Roll No.
(Write the digits in words) .....

Serial No. of OMR Answer Sheet .....

Day and Date ....
(Signature of Invigilator)

INSTRUCTIONS TO CANDIDATES

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

1. Within 10 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 separare 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 also Roll No. and OMR Sheet No. on the Question Booklet.

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

7. 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 ball-point pen as mentioned in the guidelines given on the first page of the Answer Sheet.
8. 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.

   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 mark).
9. For rough work, use the inner back page of the title cover and the blank page at the end of this Booklet.
10. Deposit *only the OMR Answer Sheet* at the end of the Test.
11. You are not permitted to leave the Examination Hall until the end of the Test.
12. 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.

निर्देश हिन्दी में अन्तिम आवरण-पृष्ठ पर दिये गए हैं।

(No. of Printed Pages : 32+2

No. of Questions/प्रश्नों की संख्या : 150

Time/समय : 2 Hours/घण्टे

Full Marks/पूर्णांक : 450

Note : (1) Attempt as many questions as you can. Each question carries **3** marks. **One** mark will be deducted for each incorrect answer. Zero mark will be awarded for each unattempted question.

अधिकाधिक प्रश्नों को हल करने का प्रयत्न करें। प्रत्येक प्रश्न **3** अंक का है। प्रत्येक गलत उत्तर के लिए एक अंक काटा जाएगा। प्रत्येक अनुत्तरित प्रश्न का प्राप्तांक शून्य होगा।

(2) If more than one alternative answers seem to be approximate to the correct answer, choose the closest one.

यदि एकाधिक वैकल्पिक उत्तर सही उत्तर के निकट प्रतीत हों, तो निकटतम सही उत्तर दें।

1. The silk fibres are made up of

(1) α-keratin (2) β-keratin (3) collagen (4) elastin

2. Which of the following silk is produced only in India?

(1) Eri silk (2) Tasar silk (3) Muga silk (4) Oak silk

3. Propolis is obtained from

(1) *Apis mellifera* (2) *Apis dorsata*

(3) *Apis indica* (4) All of the above

4. In bees, dance is meant for

(1) commensalism (2) communication

(3) visiting the source of food (4) social activity

5. Chemically speaking, lac is a

(1) oligopeptide (2) oligosaccharide

(3) resin (4) lipoprotein

6. Which is not the constituent of lac?

(1) Dye (2) Wax (3) Gum (4) Resin

7. Induced breeding in fishes is done by the hormone secreted by

(1) gonad (2) pituitary (3) adrenal (4) thyroid

8. *Gambusia affinis* is the predator of

(1) caterpillars (2) small fishes

(3) mosquito larvae (4) tadpoles

9. Which one of the following is most recently domestical?

(1) Sheep (2) Ongole (3) Silkworm (4) Turkey

10. Which of the following is not an 'indigenous' breed of fowl?

(1) Aseel (2) Brahma (3) Ghagus (4) Chittagong

11. An exotic breed of cow is

(1) Holstein-Friesian (2) Ongole

(3) Halliker (4) Deoni

12. Which of the following is not a breed of goat?

(1) Jamunapari (2) Bar-bari (3) Rath (4) Beetal

13. Largest field rat found in India is

(1) *Bandicota bengalensis* (2) *Bandicota indica*

(3) *Nesokia indica* (4) *Tetra indica*

14. Zoological name of flour beetle is

(1) *Tribolium* (2) *Sitophylus* (3) *Trogoderma* (4) Callosobruchus

15. Pesticides with very low biodegradation but strong affinity for fatty tissues ar

(1) Triazines
(2) Pyrethroids
(3) Organochlorines
(4) Organophosphates

16. In Linnean hierarchy, which of the following taxonomic categories will co between class and order?

(1) Tribe
(2) Cohort
(3) Family
(4) Species group

17. A taxonomic level concerned with the arrangement of species into a natu system of lower and higher taxa is known as

(1) Alpha taxonomy
(2) Beta taxonomy
(3) Gamma taxonomy
(4) Omega taxonomy

18. The level of taxonomy that deals with various biological aspects of taxa, rangi from the study of intraspecific populations to studies of speciation ar evolutionary rates and trends is known as

(1) Alpha taxonomy
(2) Beta taxonomy
(3) Gamma taxonomy
(4) Omega taxonomy

19. Which of the following taxonomic categories is the lowest obligatory highe category and the lowest of all categories established strictly by comparativ data?

(1) Species (2) Genus (3) Order (4) Family

Labeo, *Catla* and *Cirrhinus* are three sympatric freshwater fishes and they belong to the order Cypriniformes. To which taxonomic category (Linnean hierarchy), these three fishes belong?

(1) Species (2) Genus (3) Family (4) Subspecies

In taxonomy, tautonym stands for

(1) same generic and species name

(2) different genus and species name

(3) same species and subspecies name

(4) a species without any race

. Six sibling species of *Anopheles maculipennis* complex have been identified on the basis of inhabiting different types of water bodies. This feature of identifying species is based on

(1) ecological characters (2) behavioural characters

(3) molecular characters (4) typological characters

3. Which species concept utilizes morphological characters to distinguish between species?

(1) Biological (2) Ecological (3) Evolutionary (4) Typological

4. The term species was given by

(1) John Ray (2) Linnaeus (3) Darwin (4) Aristotle

(P.T.O.)

4)

25. Who defined species as "Group of interbreeding natural populations that reproductively isolated from other such group"?

(1) Stebbins (2) Linnaeus (3) Dobzhansky (4) Mayr

26. *Naja naja, Gorilla gorilla, Rita rita* are the scientific names with same generic ar species names. Such pattern of nomenclature is known as

(1) Tautonym (2) Synonym

(3) Homonym (4) Monotypic species

27. Members of a species may have polymorphic forms due to sexual dimorphism colouration and availability of various mutants in the population. Which of th following species concept considers each morphological form to be a separat species?

(1) Biological species concept

(2) Typological species concept

(3) Evolutionary species concept

(4) Ecological species concept

28. A gradual geographic change of a character in a series of contiguous populations is known as

(1) phylogenetic variation (2) dichotomous variation

(3) discontinuous variation (4) clinal variation

29. Flash pattern are species specific in most genera of fire flies and have been used by systematists to unmask sibling species. This particular trait for taxonomic significance comes under

(1) molecular character
(2) morphological character
(3) ecological character
(4) behavioural character

30. Temporal isolation refers to

(1) isolation through time
(2) isolation through temperature
(3) isolation through space
(4) isolation through strength

31. Which one of the following four scientists drew attention to the 4 areas of enquiry-causation, development, evolution and function of behaviour?

(1) Niko Tinbergen
(2) Konrad Lorenz
(3) Karl von Frisch
(4) J. von Uexküll

32. Some populations of monarch butterflies migrate, form roosting colonies and diapause while other populations migrate but do not form colonies or enter into diapauses and still other monarch populations do not migrate at all. Which of the following questions is best related to the ultimate causation?

(1) Which neural mechanisms are involved in the regulation of these behaviours?

(2) What are the environmental cues affecting migratory behaviour?

(3) Why should there be the migratory and non-migratory forms of the monarch?

(4) Do monarch butterflies use visual cues while locating the roosting sites?

33. Fixed action patterns are

(1) learnt from conspecifics

(2) learnt only from the parents

(3) shown even by animals reared in isolation

(4) shown only by adult animals

34. Which one of the following is not a characteristic feature of agonistic behavioural pattern?

(1) Attach

(2) Submission

(3) Threat display

(4) Grooming

35. An experiment was conducted by Dethier and his co-workers to study feeding mechanism in blow flies. When they cut a small nerve connecting the foregut and the brain the flies became permanently hungry. The technique used was

(1) psychopharmacology

(2) transection

(3) lesion

(4) neural stimulation

36. The Ramsar convention aims at

(1) wetland conservation

(2) migratory bird conservation

(3) putting a ban on wildlife trade

(4) sustainable use of natural resources

37. The State bird of Uttar Pradesh is the

(1) Asian Koel
(2) Sarus Crane
(3) Great Hornbill
(4) House Sparrow

38. Biodiversity hotspots in India are located in

(1) Andaman and Nicobar Islands
(2) Lakshadweep Islands and Deccan Peninsula
(3) Western Ghats and Eastern Himalayas
(4) Eastern Ghats and Brahmaputra Valley

39. Keystone species

(1) exert impact disproportionate to abundance
(2) detect presence of pollutants
(3) are prone to extinction
(4) are of direct human value

40. High level of endemism is a characteristic feature of

(1) mountains (2) islands (3) plains (4) deserts

41. The coordinated interaction in the construction of organs by one group of cells changing the behaviour of an adjacent set of cells, is known as

(1) induction
(2) determination
(3) coordination
(4) differentiation

42. Proteins secreted by a cell or a group of cells that alter the behaviour or process of differentiation of adjacent cells are called as

(1) autocrine factors
(2) paracrine factors
(3) endocrine factors
(4) factors

43. A labile phase when a cell or tissue is placed in neutral environment follows a particular path of differentiation, is termed as

(1) neutral specification
(2) syncytial specification
(3) autonomous specification
(4) conditional specification

44. The ability of cells, to achieve their respective fate of differentiation by interaction with other cells, is known as

(1) inductive determination
(2) facultative differentiation
(3) autonomous specification
(4) conditional specification

45. A cytoplasm that contains many nuclei is called a

(1) syncytium
(2) blastoderm
(3) trophectoderem
(4) polymorphonuclear

46. The cortical granule reaction seen in sea urchin eggs helps in blocking polyspermy. This is a

(1) fastest block
(2) slower mechanical block
(3) intermediate block
(4) membrane potential change

47. The molecule which acts as releaser of calcium from intracellular compartments for activation of egg metabolism is

(1) diacylglycerol
(2) NAD^+
(3) inositol 1,4,5-triphosphate
(4) cyclin 3

48. Zona glycoproteins 1, 2 and 3 of mouse are present on

(1) sperm head
(2) egg nuclear membrane
(3) sperm mitochondrial membrane
(4) egg surface

49. Prior to sperm entry the mature oocyte completes

(1) first meiotic division shedding one polar body
(2) second meiotic division shedding two polar bodies
(3) diplotene and comes out of arrest
(4) a mitotic division

50. Inturning of cell sheet over the basal surface of an outer layer during early embryonic development, is terms as

(1) ingression (2) involution (3) delamination (4) epiboly

51. Meroblastic cleavage is seen in

(1) isolecithal eggs (2) alecithal eggs

(3) telolecithal eggs (4) mesolecithal eggs

52. A blastocoel is formed during

(1) gastrulation (2) neurulation

(3) annulation (4) cleavage divisions

53. The main body of the chick embryo is contributed by

(1) epiblast (2) hypoblast

(3) subgerminal cavity (4) top layer of yolk

54. The blastopore of amphibian embryo becomes, in future, the

(1) mouth (2) anus (3) blastocoel (4) gut

55. Due to inturning of the cell sheet during gastrulation in frog embryo a cavity is formed, which grows in size as gastrulation progresses. The cavity thus formed is known as

(1) Blastocoel (2) Enterocoel (3) Archenteron (4) Pseudocoel

56. Due to a gene mutation if hind limb develops in place of a forelimb in an animal, such transformations are termed as

(1) homeosis

(2) homologous transformation

(3) hetcrologous transformation

(4) homeotic transformation

57. The polarity of oocyte in *Drosophila* is set by a group of genes known as

(1) maternal genes

(2) zygotic genes

(3) homeotic selector gencs

(4) gap genes

58. The thickened ectodermal layer of a tetrapod limb bud is termed as

(1) mesenchyme

(2) Apical Ectodermal Ridge (AER)

(3) apical bud

(4) progress zone

59. The transition from a larval stage to an adult stage is termed as

(1) eclosion

(2) hatching

(3) metamorphosis

(4) retrogression

60. If a hydra is cut into two pieces, then both the pieces repattern the existing tissue forming two small hydra. Such regeneration is called as

(1) epimorphosis

(2) compensatory regeneration

(3) stem cell based regeneration

(4) morphallaxis

61. Which neurotransmitter released from hypothalamus regulates secretion prolactin?

(1) Acetylcholine (2) Dopamine

(3) Norepinephrine (4) Serotonin

62. Which hormone controls the release of milk after parturition?

(1) Vasopressin (2) Oxytocin (3) Prolactin (4) Relaxin

63. Bulk of androgen in the testis is produced by

(1) Sertoli cells (2) Peritubular myoid cells

(3) Leydig cells (4) Germ cells

64. Hormone required for maintenance of pregnancy is

(1) testosterone (2) aldosterone

(3) progesterone (4) corticosterone

65. Which gland is associated with Addison's disease?

(1) Thyroid (2) Pineal (3) Adrenal (4) Parathyroid

66. Aldosterone is secreted from

(1) Zona glomerulosa (2) Zona pellucida

(3) Zona fasciculata (4) Zona reticularis

67. Ovulation occurs during which stage of estrous cycle in a rat?

(1) Metestrus (2) Proestrus (3) Estrus (4) Diestrus

68. Diabetes insipidus is caused due to deficiency of

(1) relaxin (2) oxytocin (3) insulin (4) vasopressin

69. Epinephrine is secreted by

(1) pineal (2) adrenal (3) pituitary (4) pancreas

70. Colloid is found in which gland?

(1) Adrenal (2) Thyroid (3) Pineal (4) Pituitary

71. Tryptophan is a precursor in biosynthesis of

(1) insulin (2) melatonin (3) calcitonin (4) prolactin

72. Renin-angiotensin system is involved in control of secretion of

(1) testosterone (2) progesterone

(3) aldosterone (4) melatonin

73. Pars intermedia secretes

(1) melanotropin (2) melatonin

(3) corticotropin (4) somatotropin

74. Androgen Binding Protein (ABP) is secreted by

(1) Sertoli cells (2) Leydig cells

(3) Peritubular myoid cells (4) Germ cells

75. Hormone involved in parturition is

(1) prolactin (2) vasopressin (3) inhibin (4) oxytocin

76. Titration of a completely protonated solution of α-Lysine against a base woul produce how many p*K* values?

(1) One (2) Two (3) Three (4) Four

77. Peptide bond is generated between

(1) α-COOH of 1st and α-NH_2 of 2nd amino acid

(2) α-NH_2 of 1st and α-COOH of 2nd amino acid

(3) β/γ-NH_2 of 1st and β/γ-COOH of 2nd amino acid

(4) α-C of 1st and α-C of 2nd amino acid

78. Exposure of a native protein to heat results into partial denaturation of the protein due to breaking of

(1) disulphide bonds
(2) hydrophobic interaction
(3) hydrogen bonds
(4) peptide bonds

79. Rapidity of an enzyme catalyzed reaction at cellular condition is mainly determined by

(1) K_m of the enzyme
(2) turnover number of the enzyme
(3) V_{max} of the enzyme
(4) K_{cat}/K_m ratio of the enzyme

80. Identify a non-carbohydrate compound from the options given below

(1) Dihydroxy acetone
(2) Glyceraldehyde
(3) Glycerol
(4) Inulin

81. Identify the glycolytic enzyme that catalyzes phosphorylation reaction

(1) Glyceraldehyde-3-phosphate dehydrogenase
(2) Hexose-phosphate isomerase
(3) Triose-phosphate isomerase
(4) Phosphoglucomutase

82. The F_0 domain of the mitochondrial F_0-F_1 complex is named so becaus represents

(1) the protein fragment given no number

(2) the protein fragment that does not perform catalytic function

(3) cofactor binding domain

(4) domain that confers oligomycin sensitivity to the complex

83. Which of the following is an ampipathic biomolecule?

(1) Starch

(2) Triglyceride

(3) Sucrose

(4) Phospholipid

84. 2'-deoxy-cytidine is a

(1) nucleotide

(2) di-nucleotide

(3) modified base

(4) nucleoside

85. During prokaryotic DNA synthesis, the RNA primers at lagging strand a removed by

(1) SI nuclease

(2) DNA polymerase I

(3) DNA polymerase III

(4) RNase II

86. The polymerase that synthesizes a polynucleotide chain in a template independent manner is

(1) DNA Pol-I

(2) DNA Pol-III

(3) RNA polymerase

(4) Poly-A polymerase

87. Formation of ' lariate' configuration is a characteristic of

(1) RNA splicing

(2) transcription initiation complex

(3) translation initiation complex

(4) DNA ligase activity

88. In a charged tRNA, amino acids are linked at

(1) 3'-end

(2) 5'-end

(3) D-loop

(4) adjacent to anti-codon sequences

89. Formation of prokaryotic translation assembly is initiated at

(1) 70S ribosome

(2) 50S ribosome

(3) 30S ribosome

(4) 55S ribosome

(P.T.O.)

90. A poly-A tail is found in

(1) SnRNA (2) tRNA (3) rRNS (4) mRNA

91. Concealing mimicry is exhibited by

(1) *Kallima* (2) *Lementis* (3) *Sesia* (4) *Heterodon*

92. Genetic variability in the natural populations is generated by

(1) genetic drift (2) Sewall-Wright effect

(3) mutation (4) selection

93. The term sibling species was proposed by

(1) Dobzhansky (2) Mayr

(3) Darwin (4) Stebbins

94. Deviation from Hardy-Weinberg equilibrium is tested by

(1) *t*-test (2) ANOVA

(3) Chi-square method (4) *F*-test

95. Definition of species under biological species concept is based on

(1) evolutionary lineages (2) morphological types

(3) reproductive isolation (4) genotypic constitutions

96. In the punctuated equilibrium, which explains evolution?

(1) There are rapid bursts separated by long period of stasis

(2) There are gradual changes

(3) There are monophyletic changes

(4) There are polyphyletic changes

97. During the evolution of horse, *Hyracotherium* appeared in

(1) Oligocene (2) Eocene

(3) Pleistocene (4) Pliocene

98. The number of toes present in *Merychippus* is

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

99. According to Darwin's theory, evolution is defined as

(1) splitting of species

(2) phyletic change

(3) descent with modification

(4) origin of reproductive isolation

100. The very good example of analogy is

(1) forelimbs of rabbit and horse

(2) pleopods and uropods in Prawn

(3) forelimbs of vertebrates

(4) wings of insects and birds

101. The principle of 'ontogeny recapitulates phylogeny' gives evidence in favour organic evolution from the discipline of Biology

(1) Comparative Anatomy (2) Embryology

(3) Palaeontology (4) Biogeography

102. Geological records are written in the rocks in the language of

(1) evolutionary change (2) anagenesis

(3) cladogenesis (4) fossils

103. In *Drosophila*, which of the following is most extensively studied isolatin mechanism?

(1) Ecological isolation (2) Seasonal isolation

(3) Mechanical isolation (4) Sexual isolation

104. The first theory of evolution was proposed by

(1) Darwin (2) Stebbins (3) Dodson (4) Lamarck

105. The species which are morphologically similar but reproductively isolated are

(1) polytypic species
(2) monotypic species
(3) sibling species
(4) Super species

106. Which of the following examples illustrates multiple allelism?

(1) Attached ear lobe

(2) Turner syndrome

(3) Sepia eye colour of *Drosophila*

(4) ABO blood group in human

107. *c l B* technique in *Drosophila* is used to detect

(1) autosomal recessive mutations

(2) autosomal dominant mutations

(3) sex-linked recessive lethal mutations

(4) sex-linked dominant lethal mutations

108. If a couple, husband having an X-linked dreadly disease and wife homozygous normal, seeks your advice regarding having children, what will be your advice out of the following?

(1) They will have 50% chance of having the affected male child

(2) They can safely go for only female child

(3) They can safely go for only male child

(4) They should not plan to have a child

109. If a cell contains 23 pairs of chromosomes just after completion of mitotic telophase, how many chromatids were present in metaphase?

(1) 23 (2) 46 (3) 92 (4) 184

110. Which of the following is an enzyme that contains a channel that allows the flow of protons across the membrane of bacterial cell?

(1) Aconitase

(2) Dehydrogenase

(3) Fumarase

(4) ATPase

111. The membrane phospholipids form bilayer, when water is available on both sides, due to

(1) its amphipathic nature

(2) presence of unsaturated fatty acids

(3) presence of saturated and unsaturated fatty acids in its tail

(4) presence of cholesterol along with phospholipids

112. In which phase of cell cycle DNA becomes 4C from 2C ?

(1) S (2) G1 (3) Metaphase (4) Anaphase

113. In hybridization experiments, high stringency washing means, washing in presence of

(1) low salt concentration and high temperature

(2) high salt concentration and high temperature

(3) high salt concentration and low temperature

(4) only water

4. The most important cell type associated with immunity of the body is

(1) platelets (2) lymphocytes (3) RBCs (4) neutrophils

5. Polysomes are many

(1) ribosomes attached to an individual mRNA

(2) chain of nucleosomes forming chromatin

(3) several lysosomes fusing during phagocytosis

(4) centrosomes clustering during mitotic division

116. Which one of the following organelles is rich in acid hydrolases?

(1) Lysosomes (2) Golgi complex

(3) Peroxisomes (4) Rough endoplasmic reticulum

117. Which of the following is the largest chromosome?

(1) Satellite chromosomes (2) X-chromosome

(3) Lampbrush chromosomes (4) Polytene chromosomes

118. Due to mutation, one amino acid may get replaced by another amino acid. Such mutations are termed as

(1) nonsense mutation (2) missense mutation

(3) frame-shift mutation (4) point mutation

(P.T.O.)

119. Which law of Mendel is revealed by dihybrid cross?

(1) Law of dominance

(2) Law of segregation

(3) Law of independent assortment

(4) Law of heterosis

120. Which of the following enzymes is used extensively for gene cloning?

(1) DNA methylase (2) DNA topoisomerase

(3) Exonuleases (4) Restriction enconucleases

121. In which of the following the pelvic girdle is made of single adult plate?

(1) Teleosts (2) Lungfishes (3) Amphibians (4) Reptiles

122. Fibula is absent in

(1) Alligator (2) Parrot (3) Deer (4) Porcupine

123. In perissodactyls, body weight is borne on

(1) Digit I (2) Digit II (3) Digit III (4) Digit IV

124. Mastoid portion of endochondral origin is a new feature of the skull of

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

25. In which of the following urochordates, no larval stage is found in their life history?

(1) Pyrosomida (2) Enterogona (3) Doliolida (4) Pleurogona

26. The earliest possible evidence of gnathostomes dates back to

(1) Precambrian period (2) Cambrian period

(3) Mid-Ordovician period (4) Silurian period

127. The operculum, a major sound transmitter in middle ear, is th peculiar feature of

(1) fishes (2) amphibians (3) reptiles (4) birds

128. The falciform process, an intrusive structure in the vitreous chamber of eye is found in

(1) cyclostomes (2) teleosts (3) reptiles (4) birds

129. Which of the following muscle is ectodermal in origin?

(1) Small dorsal muscle that pulls forward the anuran eye lens

(2) Retractor lentis muscle of teleost eye lens

(3) Small ventral muscle that pulls forward the amphibian eye lens

(4) The protractor muscle, attached to ventral rim of the elasmobranch eye lens

(P.T.O.)

130. Pleurodentition is found

(1) Elasmobranches
(2) Teleosts
(3) Necturus
(4) Crocodiles

131. Ampulla of Vater is found in the

(1) hepatic duct
(2) pancreatic duct
(3) proximal segment of common duct
(4) terminal segment of common duct

132. In vertebrates with renal portal system, venous blood supply is not concerned with

(1) PCT
(2) DCT
(3) Glomeruli
(4) Loop of Henley

133. Primordial germ cells are mesodermal, not the endodermal, in origin in

(1) Teleosts (2) Anurans (3) Urodeles (4) Apodans

134. Which of the following employ force pump mechanism to inhale air to lungs?

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

35. In ray-finned fishes that use air bladder as lung, blood from air bladder drains into

(1) hepatic veins
(2) renal veins
(3) coronary vein
(4) atrium

136. Extrosomes are present in

(1) Protists
(2) Echinodermets
(3) Mollusca
(4) Porifera

137. The term orthomitosis refers to

(1) symmetry of spindle
(2) spindle fibre that breaks during cell division
(3) joining of the spindle fibre
(4) movement of spindle fibre towards the equatorial plate

138. Bio-erosion causes the significant damage to oyestors chiefly by

(1) Sponges (2) Orthonetida (3) Mollusca (4) Diatom

139. Coral bleaching takes place due to

(1) stress condition
(2) high temperature
(3) increase salinity of water
(4) lack of nutrient material in the surrounding

140. Cydippida larvae is the example of

(1) Ctenophora

(2) Branchiostome

(3) Sycon

(4) Jellyfish

141. Midgut enzyme apparently limited to exo-peptidase which is probably account for?

(1) High rate of digestion of protein

(2) Low rate of digestion of protein

(3) High rate of digestion of lipid

(4) Low rate of digestion of lipid

142. In which animals terminal claw is present for locomotion?

(1) Olychophoras

(2) Echirus

(3) Silverfish

(4) Limuls

143. Humidity detector is spider is called

(1) Tarsal organ

(2) Pectines

(3) Lyriform organs

(4) Nephrocytes

144. The total number of pleomeres in Palaemon is

(1) 6 (2) 5 (3) 8 (4) 7

145. Aquaferous system prevent in

(1) Porifera
(2) Echinodermata
(3) Protozoa
(4) Arthropoda

146. In which of the phylum, the coelom is divided into protocoelom, mesocoelom and metacoelom?

(1) Echinodermata
(2) Coelenterata
(3) Porifera
(4) Mollusca

147. The mouthpart of Mallophaga is a

(1) sucking type
(2) piercing type
(3) siphoning type
(4) bitting and chewing type

148. In which larvae condition pre- and post-ciliated band is present?

(1) Trochophore
(2) Veliger
(3) Radia larvae
(4) Amphiblastula larvae

149. Polyembryony condition occurs in

(1) Hymenoptera
(2) Diptera
(3) Onychophors
(4) Hemiptera

150. In which of the following animals eight comb plates and two long tentacles are present?

(1) Ctenophore (2) Bore (3) Hydra (4) Ringworm

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अभ्यर्थियों के लिए निर्देश

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

1. प्रश्न पुस्तिका मिलने के 10 मिनट के अन्दर ही देख लें कि प्रश्नपत्र में सभी पृष्ठ मौजूद हैं और कोई प्रश्न छूटा नहीं है। पुस्तिका दोषयुक्त पाये जाने पर इसकी सूचना तत्काल कक्ष-निरीक्षक को देकर सम्पूर्ण प्रश्नपत्र की दूसरी पुस्तिका प्राप्त कर लें।

2. परीक्षा भवन में *लिफाफा रहित प्रवेश-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 मोड़ें और न ही विकृत करें। दूसरा उत्तर-पत्र नहीं दिया जायेगा, केवल उत्तर-पत्र का ही मूल्यांकन किया जायेगा।*

4. अपना *अनुक्रमांक तथा उत्तर-पत्र का क्रमांक प्रथम आवरण-पृष्ठ पर पेन* से निर्धारित स्थान पर लिखें।

5. उत्तर-पत्र के प्रथम पृष्ठ पर पेन से अपना अनुक्रमांक निर्धारित स्थान पर लिखें तथा नीचे दिये वृत्तों को गाढ़ा कर दें। जहाँ-जहाँ आवश्यक हो वहाँ प्रश्न-पुस्तिका का क्रमांक तथा सेट का नम्बर उचित स्थानों पर लिखें।

6. ओ० एम० आर० पत्र पर अनुक्रमांक संख्या, प्रश्न-पुस्तिका संख्या व सेट संख्या (यदि कोई हो) तथा प्रश्न-पुस्तिका पर अनुक्रमांक सं० और ओ० एम० आर० पत्र सं० की प्रविष्टियों में उपरिलेखन की अनुमति नहीं है।

7. उपर्युक्त प्रविष्टियों में कोई भी परिवर्तन कक्ष निरीक्षक द्वारा प्रमाणित होना चाहिये अन्यथा यह एक अनुचित साधन का प्रयोग माना जायेगा।

8. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार वैकल्पिक उत्तर दिये गये हैं। *प्रत्येक प्रश्न के वैकल्पिक उत्तर के लिये आपको उत्तर-पत्र की सम्बन्धित पंक्ति के सामने दिये गये वृत्त को उत्तर-पत्र के प्रथम पृष्ठ पर दिये गये निर्देशों के अनुसार पेन से गाढ़ा करना है।*

9. प्रत्येक प्रश्न के उत्तर के लिये केवल एक ही वृत्त को गाढ़ा करें। एक से अधिक वृत्तों को गाढ़ा करने पर अथवा एक वृत्त को अपूर्ण भरने पर वह उत्तर गलत माना जायेगा।

10. ध्यान दें कि एक बार स्याही द्वारा अंकित उत्तर बदला नहीं जा सकता है। यदि आप किसी प्रश्न का उत्तर *नहीं देना चाहते है,* तो सम्बन्धित पंक्ति के सामने दिये गये सभी वृत्तों को खाली छोड़ दें। ऐसे प्रश्नों पर शून्य अंक दिये जायेंगे।

11. रफ़ कार्य के लिये प्रश्न-पुस्तिका के मुखपृष्ठ के अन्दर वाले पृष्ठ तथा अंतिम पृष्ठ का प्रयोग करें।

12. परीक्षा के उपरान्त केवल *ओ०एम०आर० 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 अभ्यर्थी परीक्षा में अनुचित साधनों का प्रयोग करता है, तो वह विश्वविद्यालय द्वारा निर्धारित दंड का/की, भागी होगा/होगी।