

## ZOOLOGY 2007

41. Mammals evolved from therapsid reptiles in Triassic period. The type of skull in these reptiles is  
(1) Anapsid skull (2) Parapsid skull (3) Synapsid skull (4) Diapsid skull
42. Each male genital opening *pheretima* has separate openings of  
(1) 2 ducts (2) 3 ducts (3) 5 ducts (4) 4 ducts

43. Match the following :

**List – I**

- (a) Inguinal canal
- (b) Rete testis
- (c) Leydig cells
- (d) *Cropora cavelrnosa*

**List –II**

- 1. Network of semeniferous tubules
- 2. Secondary sexual characters
- 3. Far descending of testis
- 4. Dorsal bundles of muscles
- 5. Terminal skin of Penis

The correct match is

- (1) a - 1; b - 2 ; c - 3 ; d - 5 ; e - 4
- (2) a - 3 ; b - 1 ; c - 4 ; d - 2 ; e - 5
- (3) a - 3 ; b - 1; c - 2; d - 5 , e - 4
- (4) a - 2 ; b - 4 ; c - 3 ; d - 5 ; e - 1

44. Identify the correct set from the following:

- (i) The application of Mathematics to Biology is Biometry.
- (ii) The study of Genetics that deals with the systematic treatment of genetic disorders is Euphenics
- (iii) The branch of Biochemistry concerned with the study of transformation and use of energy by living cells of organisms is Biotechnology
- (iv) The study deals with the application of statistical methods for computation and analysis of biological data is Bioinformatics

The correct set is :

- (1) i and ii (2) i and iii (3) ii and iii (4) i and iv

45. Match the following :

**Set– I**

- (a) *Petromyzon* 1. Planula larva
- (b) *Holothuria* 2. Axolotal larva
- (c) *Ambystoma* 3. Auricularia larva
- 4. *Ammocoetes* larva
- 5. Trochophore larva

**Set - II**

The correct match is :

- (1) a - 4; b - 2 ; c - 3 ; d - 1 ; e - 5
- (2) a - 2 ; b - 4 ; c - 2 ; d - 1 ; e - 5
- (3) a - 4; b - 3 ; c - 2 ; d - 5 ; e - 1
- (4) a - 1; b - 3 ; c - 2 ; d - 5 ; e - 4

46. Atransverse section of *Pheretima* taken through the 10th segment is observed in microscope. Which of the following structures can be observed in the section?

- (1) Stomach, Dorsal blood vessel, ventral blood vessel, Supra-oesophageal vessel, Anterior loops, Ring vessels and Micronephridia
- (2) Stomach, Dorsal blood vessel, ventral blood vessel, Lateral hearts, Ring vessels and Pharyngeal nephridia
- (3) Intestine, Dorsal blood vessel, Ventral blood vessel, Supra-oesophageal vessel and Septal nephridia
- (4) Stomach, Dorsal blood vessel, sub neural blood vessel and lateral hearts

47. When a cow is crossed to a bull and the female progeny is yielding more milk than its mother. From this it is inferred
- (1) More number of genes for high yielding milk are inherited, only from the female parent
  - (2) More number of genes for high yielding milk are inherited only from the male parent
  - (3) More number of genes for high yielding milk are inherited from both the parents
  - (4) The progeny through mutation achieved more number of genes for high yielding milk
48. Which of the following animals is not only a living fossil but also considered as connecting link ?
- (1) Sphenodon
  - (2) Limulus
  - (3) Neopilina
  - (4) Latimeria
49. Identify the correct sequence of classification of the following:
- (I) Eutheria
  - (II) Mammalia
  - (III) Leporidae
  - (IV) Lagomorpha
  - (V) Oryctolagus
- The correct sequence is :
- (1) II → IV → I → V → III
  - (2) II → I → IV → III → V
  - (3) II → I → IV → V → II
  - (4) I → V → III → II → IV
50. During the development of zygote of Earthworm macromeres develop into
- (1) Mesoderm
  - (2) Endoderm
  - (3) Ectoderm
  - (4) All the three germinal layers
51. In man four phenotypes of blood groups are due to the presence of antigen 'N' and antigen 'B' on the RBC. The chromosome that has the gene to control these antigens is
- (1) X-chromosome
  - (2) 21<sup>st</sup> chromosome
  - (3) 9<sup>th</sup> chromosome
  - (4) 7<sup>th</sup> chromosome
52. Which of the following possesses a hard exoskeleton formed by calcium carbonate?
- (1) Physalia
  - (2) Aurelia
  - (3) Corallium
  - (4) Halimeda
53. In Rabbit foliate papillae are
- (1) situated on the margin of tongue
  - (2) situated on the upper surface of tongue
  - (3) situated at the base of tongue
  - (4) situated at the sides of the base of the tongue
54. *Periplaneta americana* has thermoreceptor sensillae on
- (1) 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> segments of tarsus of legs
  - (2) 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> segments of tarsus of legs
  - (3) Pedicel of antenna
  - (4) 15<sup>th</sup> segment of anal cerci
55. Intron transcripts in heterogenous nuclear RNA (hn RNA) are removed and exon transcripts are joined together under the direction of protein complexes. These complexes are
- (1) Polysomes
  - (2) edc complex
  - (3) Spliceosomes
  - (4) Endopeptidases
56. In understanding, different types of symmetry, the term used as principal axis means
- (1) An imaginary straight line joining two opposite points at the ends
  - (2) An imaginary straight line joining the mid point at one end and the mid point at the opposite end
  - (3) A flat area that runs through any axis
  - (4) An animal having its body parts arranged in such a manner to exhibit symmetry
57. The nasal chamber of rabbit has three thin twisted bony plates called conchae. They are lined by
- (1) striated cuboidal epithelium
  - (2) simple cuboidal epithelium
  - (3) simple squamous epithelium

- (4) Simple ciliated columnar epithelium
58. If ducts in *Periplaneta* open into
- (1) Stomach (2) Base of pharynx  
(3) Base of Hypopharynx (4) Base of Oesophagus
59. When a cross is conducted between black feathered hen and a white feathered cock, blue feathered fowls, are formed. When these fowls are allowed for interbreeding, in F<sub>2</sub> generation" there are 20 blue fowls. What would, be the number of black and white fowls?
- (1) Black 20, white 10 (2) Black 20, white 20  
(3) Black 10, white 10 (4) Black 10, white 20
60. Match the following:

**Set - I Set - II**

- (a) Astrocytes 1. Resting macrophases  
(b) Microglia 2. Precursors of Myelin sheath  
(c) Oligodendrocytes 3. Set up currents in cerebrospinal fluid  
(d) Dependymal cells 4. Protects nerons of brain from toxins

The correct match is :

- (1) a - 2 ; b - 3 ; c - 4 ; d - 1  
(2) a - 1 ; b - 3 ; c - 2 ; d - 4  
(3) a - 3 ; b - 2 ; c - 4 ; d - 1  
(4) a - 4 ; b - 1 ; c - 2 ; d - 3
61. Identify' the correct set of arteries formed from each common iliac artery of Rabbit
- (1) Internal Iliac, External Iliac, Vesicular, Lumbar, Posterior epigastric arteries  
(2) Internal Iliac, External Iliac, Vesicular, Posterior mesenteric, lumbar arteries  
(3) Internal Iliac, External Iliac, Vesicular, Uterine, Posterior epigastric arteries  
(4) Internal Iliac, External Iliac, Uterine, Lumbar, Posterior epigastric arteries
62. Which of the following have biting and chewing type of mouth parts?
- (a) Cimex  
(b) Larvae of silk moth .  
(c) Tse-Tse fly  
(d) larvae of butterfly  
(e) Grass hopper

The correct pair is :

- (1) b, d, e (2) b, c, d (3) a, b, d (4) c, d, e
63. Match the folio\:, ag:

**Set - I Set - II**

- (a) T.R. Malthus 1. On the tendency of varieties to depart from original types  
(b) Sir Charles Lyell 2. Phi/or-op , Zoologique  
(c) Weismann 3. On the principles of populations  
(d) Lamarck \ 4. Principles of Geology  
(e) Alfred Russel Wallace 5. Germinal selection

The correct match is :

- (1) a - 3 ; b - 2 ; c - 5 ; d - 4 ; e - 1  
(2) a - 3 ; b - 4 ; c - 2 ; d - 5 ; e - 1  
(3) a - 3 ; b - 4 ; c - 5 ; d - 2 ; e - 1  
(4) a - 3 ; b - 5 ; c - 4 ; d - 1 ; e - 2

64. **Statement (S):** Conjugation is a temporary union between two ciliates belonging to two different mating types for the exchange and reconstitution of nuclear materials  
**Reason (R):** Conjugation occurs between two inactive individuals which have gained their vigour and vitality due to chromosomal imbalance in their macronuclei caused by repeated amitotic division.  
 The correct answer is :
- (1) Both S and R are true and R explains S
  - (2) Both S and R are true but R cannot explain S
  - (3) Only R is correct but not S
  - (4) Both S and R are wrong
65. When does glomerular filtration occur in Bowman's capsule?
- (1) When Hydrostatic pressure of blood in the glomerulus is 70mm Hg and net filtrate pressure is - 25 mm Hg.
  - (2) When Hydrostatic pressure of blood in the glomerulus is 70 mm Hg and net filtrate pressure is - 35 mm Hg
  - (3) When Hydrostatic pressure of blood in the glomerulus is 70 mm Hg and net filtrate pressure is 10 mm Hg.
  - (4) When Hydrostatic pressure of blood in the glomerulus is 70 mm Hg and net filtrate pressure is - 70 mm - Hg.
66. The organs that assist in sound production in mosquito are
- (1) Hairy appendages
  - (2) Mouth parts
  - (3) Hemelytra
  - (4) Halteres
67. *Myrmecobius* and *Myrmecophaga* are closely related and have similar adaptations for the same habitat. This phenomenon is
- (1) Divergent evolution
  - (2) Homoplasy
  - (3) Convergent evolution
  - (4) Parallel evolution
68. Which are the sites of ATPase activity in the cilia and flagella?
- (1) Base of cilia and flagella
  - (2) Doublets
  - (3) Basal granules of cilia and flagella
  - (4) Dynein arms
69. This joint allows restricted movement in different planes
- (1) Arthrodia
  - (2) Enarthroses
  - (3) Ginglymi
  - (4) Rotatoria
70. Match the following concepts:

**Set -I**

- (a) Allen's rule
- (b) Bergman's rule
- (c) Jordan's rule
- (d) Gloger's rule

**Set -II**

1. Fishes of cooler waters have more vertebrae than those found in hot waters
2. Temperature influences pigmentation in animals
3. Temperature affects various organs of animals
4. Body size of homeotherms in cold region is large whereas those living in hot regions are small

The correct match is;

- (1) a - 2 ; b - 1 ; c - 3 ; d - 4
  - (2) a - 4 ; b - 2 ; c - 3 ; d - 1
  - (3) a - 3 ; b - 4 ; c - 1 ; d - 2
  - (4) a - 4 ; b - 3 ; c - 2 ; d - 1
71. Identify the Hepatitis virus, which cannot survive independently and it requires another hepatitis virus for its multiplication
- (1) Hepatitis 'A' virus
  - (2) Hepatitis 'B' virus
  - (3) Hepatitis 'C' virus
  - (4) Hepatitis 'D' virus.

72. Fasciola hepatica is a digenetic parasite. Sheep and Snail are two hosts, Snail is
- (1) Intermediate host (2) Paratenic host  
(3) Vector host (4) Reservoir host
73. The hypo-secretion of which hormones leads to loss of sodium and water through urine, low blood pressure and hypo-tension?
- (1) Thyrotropic hormones (2) Hormones of Adrenal cortex  
(3) Hormones of Adrenal medulla (4) Luteotrophic hormones
74. **Statement (S)** : Daphnia populations in a water body, at different seasons of an year showed marked variations in their body morphology.  
**Reason (R)** : Cyclomorphosis in some planktonic organisms is influenced by the variations in temperatures prevailing in their water bodies at different seasons.
- The correct answer is :
- (1) Both S and R are true and R explains S  
(2) Both S and R are true but R cannot explain S  
(3) Only S is correct but not R  
(4) Both Sand R are wrong
75. **Statement (S)** : The phenomenon where tumour cells detach and migrate to other parts of the body where they give rise to secondary tumours is called Metastasis.  
**Reason (R)** : Abnormal antigens on the surface of cell and unusual number of chromosomes cause Metastasis.
- The correct answer is
- (1) Both Sand R are true and R explains S  
(2) Both Sand R are true but R cannot explain S  
(3) Only S is correct but not R  
(4) Both Sand R are wrong
76. Note the following:
- (i) During gametogenesis reduction division occurs and gametes formed are haploid, according to Bano
- (ii) Erythrocytic cycle begins with the entry of either cryptozoites or micrometa-cryptozoites  
(iii) Maturation of gametocytes generally take place in spleen and bone marrow  
(iv) The prepatent period is about 8 days
- Which of the above statements all true for plasmodium vivax ?
- (1) i, ii and iii (2) ii, iii and iv (3) i, iii and iv (4) i, ii and iv
77. In Rabbit, placenta is formed by
- (1) chorio allantoic membrane ana yolk sac.  
(2) amnion, chorion and yolk sac.  
(3) chorio allantoic membrane ana endometrium.  
(4) allantois and endometrium.
78. Which of the following vertebrates show the formation of middle ear (eustachian recess) for the first time?
- (1) Exocoetus (2) Rana (3) Echis (4) Hippocampus
79. In poultry birds nasal and eye discharges with foul smell, actue respiratory problem and inflamed and swollen eyes are the symptoms of
- (1) Chronic Respiratory disease  
(2) Infectious coryza disease  
(3) Brooder Pneumonia disease  
(4) Marek's disease

80. Arrange the external openings and their segmental numbers of Pheretima

*Set - I*      *Set - II*

(a) Male genital apertures

1. Between 12/13 to last segment

(b) Dorsal pores

2. From 3<sup>rd</sup> to last segment

(c) Spermathecal apertures

3. 18<sup>th</sup> segment

4. From 5/6 to 8/9 segments

(d) Nephridiopores

The correct set is :

(1) a - 2 ; b - 1 ; c - 3 ; d - 4

(2) a - 3 ; b - 1 ; c - 4 ; d - 2

(3) a - 3 ; b - 4 ; c - 2 ; d - 1

(4) a - 2 ; b - 3 ; c - 1 ; d - 4

### ANSWERS

(41) 3	(42) 2	(43) 3	(44) 1	(45) 3
(46) 1	(47) 3	(48) 3	(49) 2	(50) 2
(51) 3	(52) 3	(53) 4	(54) 1	(55) 3
(56) 2	(57) 4	(58) 3	(59) 3	(60) 4
(61) 3	(62) 1	(63) 3	(64) 3	(65) 3
(66) 4	(67) 4	(68) 4	(69) 1	(70) 3
(71) 4	(72) 1	(73) 2	(74) 1	(75) 1
(76) 2	(77) 3	(78) 2	(79) 2	(80) 2