

ZOOLOGY 2006

41. *Statement (S)* : Linnaeus system of animal classification is essentially an artificial system, yet it has become a natural system.
Reason (R) : Similarities forming the basis in Linnaean system are indicative of genetic relationship.
 (1) Both S and R are true and R is the correct explanation to S
 (2) Both S and R are true, but R cannot explain S
 (3) Only S is true and R is not true
 (4) S is not correct and R cannot explain S
42. The natural selection that acts against change in the form and keeps the population constant through the time is :
 (1) Directional (2) Disruptive (3) Not acting (4) Stabilizing
43. Lepas, Limulus, Lepisma and Scolopendra have jointed appendages. Which of the below given set of organisms are aquatic and respire through gills :
 (1) Lepas and Lepisma (2) Lepas and Limulus
 (3) Limulus and Scolopendra (4) Scolopendra and Lepas
44. The animal as an adult secondarily acquires radial symmetry when its bilaterally symmetrical larva metamorphoses, is :
 (1) Polygordius (2) Gorgonia (3) Gorgonocephalus (4) Pila
45. Match the following :
- | Set – I | Set – II |
|--|-----------------------------|
| a. Columnar epithelium | 1. Larynx |
| b. Ligaments | 2. Eosinopaenia |
| c. Chondroblast | 3. Elastic tissue |
| d. Acidophils | 4. Urinary bladder |
| e. Uninucleated spindle shaped muscle fibers | 5. Microvilli |
| (1) a-5, b-3, c-1, d-2, e-4 | (2) a-5, b-1, c-3, d-4, e-4 |
| (3) a-1, b-5, c-3, d-2, e-4 | (4) a-5, b-3, c-1, d-4, e-2 |
46. The vector of the parasite that causes calabar swelling of the eye is :
 (1) Triatoma infestans (2) Chrysops dimidiata
 (3) Bulinus tenella (4) Phlebotomus sergenti
47. A triploblastic pseudocoelomate, bilaterally symmetrical human parasite which is oviparous and the transmission is by contact. It is :
 (1) Filarial worm (2) Hook worm
 (3) Palalo worm (4) Tape worm
48. In pheretima, the lateral hearts that connect the supra oesophageal blood vessel with ventral blood vessel are located in these segments :
 (1) 7 and 9 (2) 18 and 19 (3) 14 and 15 (4) 12 and 13
49. Identify the correct statements regarding the nuclei of verticella
 (a) Both macro and micro nuclei are diploid
 (b) Macro nucleus is diploid and micro nucleus is haploid
 (c) The male and female pro-nuclei are haploid
 (d) Both pronuclei are diploid
 (e) Zygote is diploid
 (1) a, b, c (2) b, c, e (3) a, d, e (4) a, c, e
50. Match the following with reference to Pheretima:
- | Set– I | Set – II |
|------------------------|-----------------|
| a. Spremiducal funnels | 1. 200-250 |

- b. Ring vessels
 c. Exo-nephric nephridia
 d. Accessory gland
 e. Ovary
 (1) a-5, b-1, c-4, d-2, e-3
 (3) a-1, b-5, c-4, d-2, e-3
2. 17 and 19th segments
 3. 12/13th segment
 4. 10, 11, 12 and 13th segments
 5. 10th and 11th segments
 (2) a-5, b-4, c-1, d-2, e-3
 (4) a-5, b-1, c-4, d-3, e-2
51. The Sclerite that covers the top of the head and the space between the two compound eyes in Periplaneta is
 (1) Clypeus (2) Labrum (3) Vertex (4) Genae
52. The type of mouth parts found in the insect that is known to spread Myiasis is :
 (1) Sponging and sucking (2) Piercing and sucking
 (3) Biting and Chewing (4) Siphoning
53. The enteronephric nephridia in Pheretima consists of the following parts:
 (a) A nephrostome (b) Terminal nephridial duct
 (c) Septal excretory canal (d) Supra-intestinal excretory canal
 (e) Long thick walled excretory canal
 (1) b, e (2) a, c, d, e (3) c, d, e (4) a, c, d
54. Abdominal ganglion in cockroach is not found in this segment (s) :
 (1) 2 and 3 (2) 4 (3) 5 (4) 6
55. Match the following :
Set – I
 a. Olfactory sensillae
 b. Peritrophic membrane
 c. Cibarium
 d. Rhabdome
 e. Apposition image
 (1) a-3, b-4, c-5, d-2, e-1
 (3) a-5, b-3, c-1, d-4, e-2
- Set – II**
 1. Ommatidium
 2. Diurnal insects
 3. Food bolus
 4. Hypopharynx
 5. Maxillary palp
 (2) a-3, b-5, c-4, d-1, e-2
 (4) a-5, b-3, c-4, d-1, e-2
56. Match the following :
Set – I
 a. Vant Hoff's rule
 b. Bergman's rule
 c. Allen's rule
 d. Jordan's rule
 (1) a-1, b-2, c-4, d-3
 (3) a-2, b-1, c-3, d-4
- Set – II**
 1. Body size
 2. Metabolic rate
 3. Development
 4. Organ size
 (2) a-3, b-4, c-2, d-1
 (4) a-2, b-1, c-4, d-3
57. A sanguivorous, ectoparasitic anadromous animal is :
 (1) Eel (2) Salmon (3) Slime eel (4) Lamprey
58. Match the following :
Set - I
 a. Ductus botalli
 b. Ductus carotians
 c. Neoteny
 d. Anadromous
 (1) a-5, b-4, c-1, d-3, e-2
- Set – II**
 1. Oikopleura
 2. Lepidosiren
 3. Lamprey
 4. Lacertilia
 5. Uraeotyphlus
 (2) a-5; b-1, c-4, d-3, e-2

- (3) a-5, b-1, c-4, d-2, e-3 (4) a-4, b-1, c-4, d-2, e-3
59. A snake is identified to be having large hexagonal vertebrae and the dorsal surface bluish with narrow white streaks, it is :
- (1) *Echis carinate* (2) *Bungarus coeruleus*
 (3) *Vipera russelli* (4) *Hemibungarus*
60. The water soluble protein associated with silk thread is :
- (1) Fibroin (2) Serecin (3) Chitin (4) Mucin
61. The cranial nerve that goes to the external rectus muscle is :
- (1) II (2) III (3) VII (4) VI
62. The following are the branches of dorsal aorta : .
- I. Intercostal II. Phrenic III. Coeliac
 IV. Anterior mesenteric V. Posterior mesenteric
- Of these which set of arteries supply the blood to the glands of digestive system:
- (1) I and II (2) III and IV (3) IV and V (4) II and III
63. Phallomeres in male *Periplaneta* arise from:
- (1) 8 and 9th sternum (2) 7th sternum (3) 8th sternum (4) 9th sternum
64. The enzyme employed for amplification of DNA during PCR is commercially obtained from :
- (1) *Streptococcus pyogenes* (2) *Bacillus licheniformis*
 (3) *Trichoderma reesi* (4) *Thermos aquancus*
65. Hormones have the following features:
- I. Adenohypophysis produces gonadotropins
 II. Besides sex cells, hormones are also produced by testis and ovary
 III. Testosterone is produced by Leydig cells
 IV. Estrogen is produced by ovary
- Which of the above factors influence secondary sexual characters ?
- (1) III and IV (2) II, III and IV (3) II and IV (4) All
66. Identify the correct pair of birds with a raft-like keel and lacking preen gland and syrinx :
- (1) *Tinamus* and *Apteryx* (2) *Rhea* and *Dromaeus*
 (3) *Casuaris* and *Struthio* (4) *Kiwi* and *Rhea*
67. Note the following :
- (a) Dentition is heterodont
 (b) Canines are poorly developed
 (c) Incisors are chisel like and poorly developed
 (d) Herbivorous and diastema is present
 (e) The dental formula is $i2/1, C\sim, pm\ 3/2, m\ 3/3$
- Which of the above are true for *oryctolagus* ?
- (1) a, b, and d (2) a, d, and e (3) a, b, d and e (4) c, d and e
68. Match the following:
- | | |
|-----------------------------|-----------------------------|
| Set – I | Set – II |
| a. Naphthoquinone | 1. Amino acid metabolism |
| b. Niacin | 2. Osteomalacia |
| c. Ascorbic acid | 3. Matrix of cartilage |
| d. Calciferol | 4. NAD |
| e. Thiamine | |
| (1) a-5, b-3, c-2, d-4, e-1 | (2) a-4, b-5, c-3, d-2, e-1 |

- (3) a-5, b-4, c-3, d-2, e-1 (4) a-3, b-5, c-4, d-2, e-1
69. Release of vasoactive mediators during hypersensitivity is associated with:
 (1) Type I (2) Type II (3) Type III (4) Type IV
70. A bald headed (Bb) man marries a non-bald woman (Bb), their progeny if all are females, the probable bald to non-bald ratio in their progeny would be:
 (1) 1 : 1 (2) 3 : 1 (3) 1 : 3 (4) 2 : 1
71. Match the following :
- | | |
|-----------------------------|-----------------------------|
| Set - I | Set -II |
| a. Atomic plant | 1. Dioxin |
| b. Cadmium | 2. Minamata |
| c. Hg | 3. Mottled enamel |
| d. Fluorine | 4. Kidney necrosis |
| e. PVC | 5. Heavy water |
| (1) a-5, b-4, c-2, d-3, e-1 | (2) a-5, b-2, c-4, d-3, e-1 |
| (3) a-4, b-5, c-2, d-3, e-1 | (4) a-4, b-5, c-2, d-1, e-3 |
72. The total number of progeny obtained from a dihybrid cross is 1280 in F₂ generation. How many of them are recombinant?
 (1) 240 (2) 360 (3) 480 (4) 720
73. If the blood group of a child is 'A' and that its mother's is 'B', then the genotype. of mother and father may be:
 (1) BB x AA (2) AB x AB (3) BO x OO (4) BO x AO
74. Match the following:
- | | |
|-----------------------------|-----------------------------|
| Set -I | Set- II |
| a. Chargaff | 1. Wilkin and Franklin |
| b. Replican | 2. Uptake of loctose |
| c. Permease | 3. hn RNA |
| d. Split gene | 4. Length of DNA |
| e. X-ray diffraction | 5. (A + G) = (C + T) |
| (1) a-5, b-4, c-2, d-3, e-1 | (2) a-5, b-4, c-1, d-3, e-2 |
| (3) a-5, b-4, c-2, d-1, e-3 | (4) a-5, b-1, c-2, d-3, e-4 |
75. In a population of 278, if observed number of 'MM', 'MN' and 'NN' blood groups is 78, 138 and 62 respectively, what would be the frequency of 'M' ?
 (1) 0.532 (2) 0.499 (3) 0.468 (4) 0.283
76. Identify the correct chronological sequence periods of Mesozoic era :
 (1) Carboniferous → Permian → Triassic → Jurassic → Cretaceous
 (2) Cretaceous → Permian → Jurassic → Carboniferous → Triassic
 (3) Cretaceous → Carboniferous → Permian → Triassic → Jurassic
 (4) Carboniferous → Jurassic → Permian → Triassic → Cretaceous
77. The juice containing sodium glycocholate is released under the influence of :
 (1) Secretin (2) Cholecystokinin
 (3) Enterogastron (4) Enterokinin
78. Match the following :
- | | |
|-----------------|-------------------|
| Set -I | Set - II |
| a. Basophils | 1. Phagocytosis |
| b. Neutrophils | 2. Inflammation |
| c. Plasma cells | 3. Blood clotting |
| d. Thrombocytes | 4. Antibodies |

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

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

79. Match the following :

Set -I

a. Scylla tranquibarica

b. Oidium albicans

c. Gracellaria

d. Anacones

e. Hypophthalmichthys moltrix

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

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

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

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

Set -II

1. Silver carp

2. Agar

3. Green crab

4. Thrush

5. Mediterranean bird

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

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

80. The anaphase promoting complex is activated by :

(1) M cdk cyclin

(2) G₁ cdk cyclin

(3) S cdk cyclin

(4) Transcription factor

ANSWERS

(41) 1 (42) 4 (43) 2 (44) 3 (45) 1

(46) 2 (47) 2 (48) 4 (49) 4 (50) 2

(51) 3 (52) 1 (53) 1 (54) 3 (55) 4

(56) 4 (57) 4 (58) 1 (59) 2 (60) 2

(61) 4 (62) 2 (63) 4 (64) 4 (65) 4

(66) 3 (67) 2 (68) 3 (69) 1 (70) 3

(71) 1 (72) 3 (73) 4 (74) 1 (75) 1

(76) 1 (77) 2 (78) 1 (79) 4 (80) 1