

AKR/57/16

2016-17

ZOOLOGY

FIRST PAPER

Full Marks : 200

Time : 3 hours

The figures in the margin indicate full marks
for the questions

GROUP—A

(Marks : 100)

Answer Question No. 1 and any three from the rest

1. Answer the following questions in brief

(any five) : $8 \times 5 = 40$

(a) Describe the canal system in asconoid sponges. State the functions of this canal system. $5+3=8$

(b) What do you mean by 'caste differentiation' in insect? Write a note on caste differentiation as seen in ants. Write its significance. $1+5+2=8$

(c) Describe the structure of a typical trochophore larva. State its phylogenetic significance. $4+4=8$

8T/50

(Turn Over)

- (d) What is statocyst of prawn? Describe its structure and the mechanism of function. $2+3+3=8$
- (e) Write about the structure of the respiratory organs in *Pila*. 8
- (f) Give an account of the parasitic adaptations of liver fluke. 8
- (g) Discuss the structural peculiarities of Prototheria. 8
- (h) Write about the air sacs found in birds. Explain their functions. $3+5=8$

2. Describe the life history of the malarial parasite referring to the asexual and sexual phases in man and mosquito respectively. $10+10=20$

3. What type of blood circulatory system is found in leech? Describe the system with proper diagram. $2+15+3=20$

4. Discuss the affinities of amphioxus. Add a brief concluding note on its systematic position. $15+5=20$

5. What is a portal system? Describe the hepatic portal and renal portal systems in toad. $4+8+8=20$

6. What is the common name of *Ancylostoma duodenale*? Describe its mode of infection and the larval migration inside the new host. $1+9+10=20$

(3)

GROUP—B

(Marks : 100)

Answer any five questions

7. Distinguish between primary and secondary air pollutants. Name the major pollutants that occur in air and discuss the effects of air pollution on plant, animal and human life. 3+5+12=20

8. Give an account of the structure of the heart in the vertebrate series. 20

9. List out one National Park or Wildlife Sanctuary from each of the eight States of North-East India. Discuss the strategies being adapted for the conservation of the rhinoceros in Assam. 8+12=20

10. (a) Given below is a sample of birth weights (in grams) of infants born during one week period :

i	X_i	i	X_i	i	X_i	i	X_i
1	3265	6	3323	11	2581	16	2759
2	3260	7	3649	12	2841	17	3248
3	3245	8	3200	13	3609	18	3314
4	3484	9	3031	14	2838	19	3101
5	4146	10	2069	15	3541	20	2834

Compute the sample median. 10

8T/50

(Turn Over)

(b) What is chi-square test? State the application of chi-square test. $2+8=10$

11. Write short notes on the following (any four) : $5 \times 4 = 20$

- (a) Cryopreservation
- (b) Queen bee pheromone
- (c) Measures of central tendency
- (d) Dentition in mammals
- (e) Symbiotic and non-symbiotic mutualism

12. Name the different host plants of Eri silkworm and mention their methods of propagation. Describe how the silkworms are reared on them and also the process of extraction of the silk from the cocoons. $5+10+5=20$

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50