

**2021**  
**ZOOLOGY**  
**[HONOURS]**  
**Paper : I**

Full Marks : 75

Time : 4 Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*1. Answer any **five** questions from the following:

1×5=5

- a) What is rete mirabile?
- b) What is syngen?
- c) Write down the scientific name of an Indian poisonous snake.
- d) Write two important characters of class Reptilia.
- e) What is Paedomorphosis?
- f) What is Tiedmann's body?
- g) What is moulting?

2. Answer any **six** questions from the following:

2×6=12

- a) What is metachronal rhythm? In which animal it is found?
- b) Distinguish between Artiodactyla and Perissodactyla.
- c) What are taenidia? In which animal it is found?
- d) Distinguish between hemimetabolous and holometabolous types of metamorphosis in insects.
- e) What is corpus callosum? What are its functions?
- f) Distinguish between physostomous and physoclistous types of swim bladder in fish.
- g) State the significance of water vascular system in Echinodermata.
- h) Distinguish between horns of Rhino and Cow.
- i) Distinguish between polyp and medusa.
- j) Distinguish between foramen ovale and foramen panizza.

3. Answer any **three** questions from the following:

$$6 \times 3 = 18$$

a) What is corpora quadrigemina? Compare the brain of a reptile with that of a mammal.

$$2 + 4 = 6$$

b) State the salient features of sub-kingdom Protozoa. Classify the sub-kingdom upto sub-phyla giving characters and examples.

$$2 + 4 = 6$$

c) What is canal system? Describe leuconoid type of canal system in sponges.

$$2 + 4 = 6$$

d) What is stone canal? Describe the structure and function of tube-feet of water vascular system in *Asterias*.

$$1 + 5 = 6$$

e) What is dentition? Give a short note on origin and structure of teeth in mammals. Comment on the structure of Elephant's tusk.

$$1 + 4 + 1 = 6$$

4. Answer any **four** questions from the following:

$$10 \times 4 = 40$$

a) i) Describe the structure of a typical feather in birds.

ii) Draw and describe a ruminant stomach.

b) i) Describe excretion in *Branchiostoma* with suitable diagram.

ii) Give a short note on anatomical peculiarities and affinities of *Sphenodon*.

c) i) What is ctenidium? Describe aquatic respiration in *Pila* with suitable diagrams.

$$2 + 3 = 5$$

ii) Comment on affinities and phylogenetic position of Dipnoi.

$$5$$

d) i) Add a note on air-sacs in Pigeon with functions.

$$5$$

ii) Describe biting mechanism of a poisonous snake with proper diagrams.

What is snake venom?

$$3 \frac{1}{2} + 1 \frac{1}{2}$$

e) i) What is swim bladder? Give a short note on swim bladder in fishes.

$$1 + 4 = 5$$

ii) What is haemolymph? Describe circulatory system in *Periplaneta* with suitable diagrams.

$$1 + 4 = 5$$

f) i) Give a note on modifications of the pronephric and mesonephric ducts in male and female amniotes.

$$5$$

ii) Make a short note on development of coelom and functions.

$$3 + 2 = 5$$