

# Rajshahi Board-2017

## Biology Second Paper

Subject Code : 

1	7	9
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Time — 2 hours 35 minutes

Creative Essay Type

Full Marks — 50

*[N.B. -The figures in the right margin indicate full marks. Read the stems carefully and answer the associated questions. Answer any five questions.]*

1. ► ★ Teacher talked about some animals in class who have coelenteron, joined legs or lungs.

- a. What is taxon? 1
- b. What do you understand by binomial classification? 2
- c. Which phylum has the above-mentioned properties? Name all of them with examples. 3
- d. Divide the animals as indicated in the stem into two different categories- higher and lower order animals. Mention two of the phyla associated with these animals. Give two characteristics of them. 4

2. ► ★ The class teacher said that, the small multicellular animal has specialized cells in its epidermis which help it to hunt, defend and move.

- a. What is mesoglea? 1
- b. What do you understand by coelenteron? 2

- c. Describe how the animal of the stem hunts its prey with the help of some special cells. 3
- d. Explain logically that the specialized cell helps the animal to defend and move. 4
3. ► Special organ of grasshopper performs its respiratory activities, which is different from the respiratory organ of rohita fish.
- a. What isostia? 1
- b. What do you understand by sinus? 2
- c. Describe the properties of the special respiratory organ. 3
- d. Compare between the two respiratory organs mentioned in the stem. 4
4. ► Observe the following stem carefully and answer some questions.

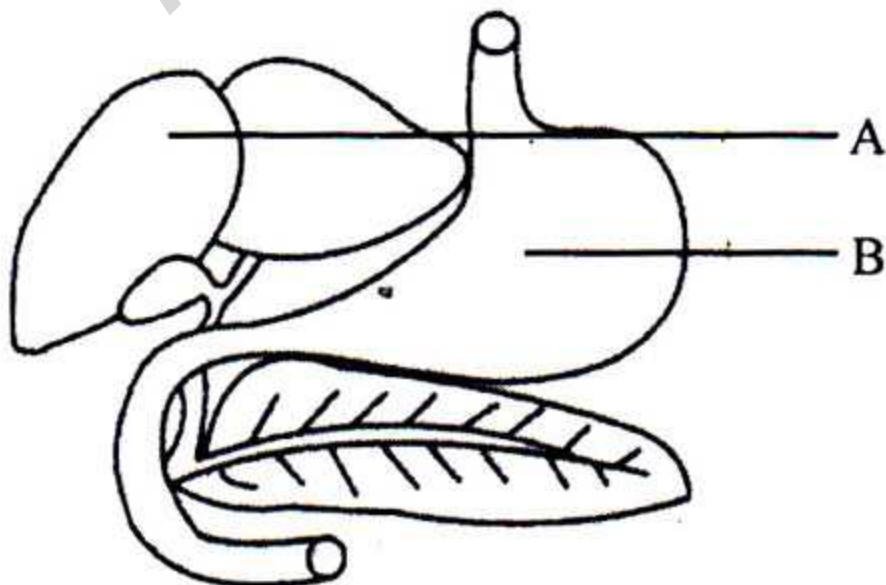


Figure-D



- a. What is saliva? 1
- b. What do you understand by obesity? 2
- c. Explain the role of “A” in digestion. 3
- d. Explain the process of mechanical digestion in the part “B” of the stem. 4
5. ► Our heart is automatically regulated by some valves and nodes.
- a. What is chordae tendineae? 1
- b. What do you understand by blood pressure? 2
- c. Describe the valves mentioned in the stem. 3
- d. Explain the activities of the nodes mentioned in the stem. 4
6. ► ★ Roni has hurt his legs by falling onto the ground while playing football. After 10 minutes, his leg joints became swollen and it was hurting a lot. When X-Ray was done, it was seen that the bone was not broken.
- a. What is involuntary muscle? 1
- b. What do you understand by Haversian system? 2
- c. Explain the reasons behind his swollen joint and leg pain. 3

d. What kind of treatment does Roni need? Give your opinion. 4

7. ► Teacher said in class that our body is protected from various microorganisms because there are some defence lines present in the outer parts of our body.

a. What is antigen? 1

b. What do you understand by immunity? 2

c. Classify the idea of the stem. 3

d. Give your opinion on the roles of the special organ. 4

8. ► Rahim noticed that the chicks of his father's poultry farm are of two different colours. And the ratio of white to coloured chicks is 13:3. He thought to himself that all the adult hens and cocks of the farm is of white colour, but how some of the chicks became coloured?

a. What is evolution? 1

b. What do you understand by rhesus factor? 2

c. Is there any connection between genetics and the event of the stem? Explain your answer. 3

d. Using a checker board, show the genetic reason behind the event of the stem. 4



Time — 25 minutes

[N.B.— Answer all the questions. Each question carries one mark. Block fully, with a ball-point pen, the circle of the letter that stands for the correct/best answer in the "Answer Sheet" for Multiple Choice Questions Examination. use a ball point pen. Each question carries 1 mark.]

1. How many carotid bones are there in human?

- (a) 29                      (b) 30  
(c) 31                      (d) 33

2. Properties of cardiac muscle —

- i. linear and involuntary  
ii. smooth and involuntary  
iii. has intercalated disc

Which one is correct?

- (a) i and ii                (b) i and iii  
(c) ii and iii              (d) i, ii and iii

Read the passage below and answer the questions no. 3-4:

While taking zoology class, the teacher described some human organs. He said that it has a shape like beans and is reddish brown in colour.

3. The organ mentioned in the stem is —

- (a) liver                    (b) stomach  
(c) pancreas              (d) kidney

4. Internal structure of the organ contains —

- i. alveolus                ii. renal pyramid  
iii. pelvis

Which one is correct?

- (a) i and ii                (b) i and iii  
(c) ii and iii              (d) i, ii and iii

5. Lipid  $\xrightarrow{E}$  Fatty acid + Glycerol; what is enzyme in 'E'?

- (a) pepsin                (b) rennin  
(c) amylase              (d) lipase

6. Which one is not a part of the small intestine?

- (a) fundus                (b) duodenum  
(c) jejunum                (d) ileum

Read the following passage and the questions no. 7-8:

Borna is 5 years old. Pus deposited in her ear and she has ear pain. When she went to the doctor, he said that it is a microbial infection but not contagious.

7. What disease Borna has?

- (a) sinusitis

(b) otitis media

(c) heart attack

(d) thalassaemia

8. What could be done to prevent the disease Borna has?

- i. taking vaccines  
ii. staying away from pollution  
iii. using antibiotics

Which one is correct?

- (a) i and ii                (b) i and iii  
(c) ii and iii              (d) i, ii and iii

9. From where insulin is secreted?

- (a) pancreas              (b) liver  
(c) spleen                (d) stomach

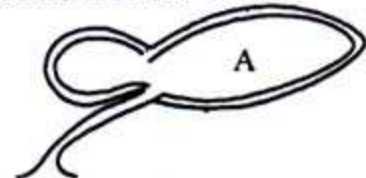
10. Sexually transmitted disorder —

- i. syphilis                ii. gonorrhoea  
iii. AIDS

Which one is correct?

- (a) i and ii                (b) i and iii  
(c) ii and iii              (d) i, ii and iii

Read the following stem and answer the questions no. 11-12:



11. "A" part of the stem contains the gas —

- i. oxygen                ii. nitrogen  
iii. carbon di oxide

Which one is correct?

- (a) i and ii                (b) i and iii  
(c) ii and iii              (d) i, ii and iii

12. The organ mentioned in the stem helps —

- i. to float                ii. to create sound  
iii. to hunt prey

Which one is correct?

- (a) i and ii                (b) i and iii  
(c) ii and iii              (d) i, ii and iii

13. Gene for red-green blindness in human is —

- (a) lethal                (b) epistatic  
(c) sex linked            (d) co-dominant



14. Pituitary gland regulates—  
 i. activities of all other glands  
 ii. digestion of carbohydrate  
 iii. secretion of somatotrophic hormone

Which one is correct?

- (a) i and ii      (b) i and iii  
 (c) ii and iii      (d) i, ii and iii

15. Where is alveolus found?

- (a) heart      (b) lungs  
 (c) stomach      (d) kidney

16. Which one is hyaline cartilage?

- (a) external ear  
 (b) uvula  
 (c) respiratory tract  
 (d) head of femur

17. The first line of defence in human—

- i. skin  
 ii. stomach acid  
 iii. neutrophil

Which one is correct?

- A i and ii      B i and iii  
 C ii and iii      D i, ii and iii

Read the following stem and answer the questions no. 18-19:

Onnesha went to her grandfather's house. She saw some nests of sparrow. At the same time, she noticed that chicks are following their hen mother in the house premise.

18. Nature of the first event of the stem is—

- i. regulated by gene and hereditary  
 ii. expressed in a similar pattern among generations  
 iii. not driven by acquired knowledge

Which one is correct?

- (a) i and ii      (b) i and iii  
 (c) ii and iii      (d) i, ii and iii

19. The second event of the stem is not the same as the first one, because —

- i. it is one kind of behaviour in terms of acquired knowledge

- ii. happens mainly in growth stage  
 iii. is definite to each species

Which one is correct?

- (a) i and ii      (b) i and iii  
 (c) ii and iii      (d) i, ii and iii

20. ★ Which nerve is associated with taste?

- (a) facial      (b) trochlear  
 (c) olfactory      (d) optic

21. Who is the scientist giving the idea of natural selection?

- (a) Jean-Baptiste Lamarck  
 (b) Charles Robert Darwin  
 (c) Nikolaas Tinbergen  
 (d) Ivan Pavlov

Read the following passage carefully and answer the questions no. 22-23:

In class, Tania is studying on two animals. These animals have bone made endoskeleton and ray-fin is present. She also came to know that all animals have a distinct scientific name.

22. According to the stem, who is the inventor of special naming for animals?

- (a) August Heckel  
 (b) Carolus Linnaeus  
 (c) Johan Mendel      (d) Jakob Clein

23. The animals of the stem —

- i. *Scoliodon laticaudus*  
 ii. *Timualosa ilsha*  
 iii. *Labeo rohita*

Which one is correct?

- (a) i and ii      (b) i and iii  
 (c) ii and iii      (d) i, ii and iii

24. ★ What kind of symmetry is observed in starfish?

- (a) bi-lateral      (b) spherical  
 (c) five-part radial  
 (d) two-part radial

25. ★ Cnidocytes are found in?

- (a) *Hydra*      (b) *Taenia*  
 (c) *Copsychus*  
 (d) *Panthera*

Ans.	1	(a)	2	(b)	3	(d)	4	(c)	5	(d)	6	(a)	7	(b)	8	(d)	9	(a)	10	(d)	11	(d)	12	(a)	13	(c)
	14	(b)	15	(b)	16	(c)	17	(a)	18	(d)	19	(a)	20	(a)	21	(b)	22	(b)	23	(c)	24	(c)	25	(a)		