

# Dinajpur Board-2017

## Biology Second Paper

Subject Code : 

1	7	9
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Time — 2 hours 35 minutes

Creative Essay Type

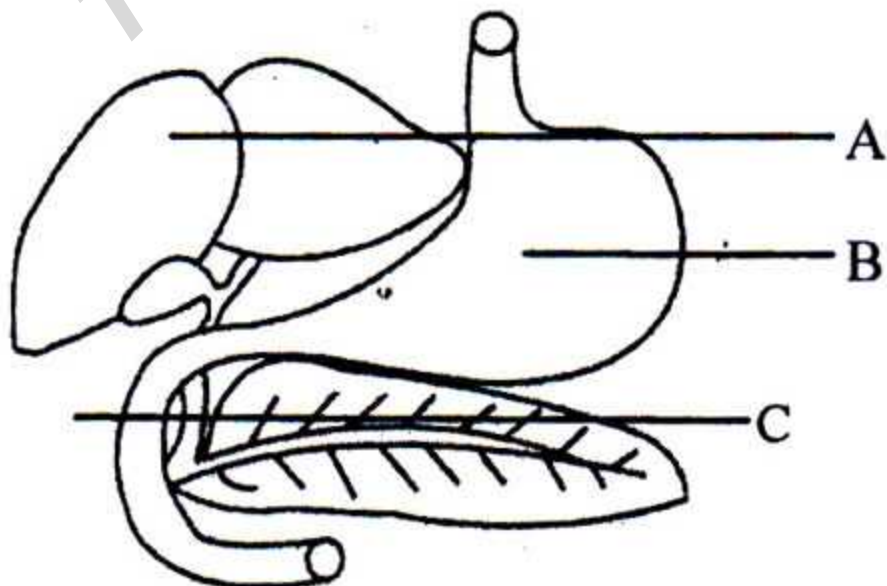
Full Marks — 50

*[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.► Mahbub went to visit a remote area. There he saw two kinds of animals. The first animal he saw had hair on its body but the second one had no hair at all.

- a. What is symbiosis? 1
- b. What do you mean by venous heart? 2
- c. Explain the characteristics of the class of the first animal. 3
- d. The two animals seen by Mahbub belongs to two different phyla. Analyze it. 4

2.► ★



- a. What is spiracle? 1
- b. "Pituitary gland is known as the master gland"— Explain. 2
- c. Describe the role of the gastric glands in digestion of the food in part B of the stem. 3
- d. Analyze the fate of food in part C of the figure in the stem. 4
- 3.►** There is an organ in the middle of the chest of human body whose rhythmical beating carries the blood to different parts of the body and blood is carried back from different parts of the body. Normal beating of the organ is essential for a healthy body.
- a. What is Osmoregulation? 1
- b. What do you mean by myogenic control? 2
- c. Mention the importance of all the valves present in the mentioned organ. 3
- d. The organ mentioned in the stem beats normally in a cyclical manner. Analyse it. 4
- 4.► ★** In zoology class, when Rodela asked the teacher about the longest and thickest bone of the human skeleton system, the teacher explained the position, structure and function of the bone. He also said that some special types of muscles help in the movement of the bone.
- a. What is a transformation? 1



- b. Mention the function of the lateral line. 2
- c. Describe the bone mentioned in the stem. 3
- d. Justify the accuracy of the last line in the stem. 4

5.► ★ Red flower (♂) × white flower (♀)



F<sub>1</sub> → pink flower



F<sub>2</sub> generation

- a. What is sinusitis? 1
- b. What do you mean by Cushing syndrome? 2
- c. No red or white flowers were not found in the F<sub>1</sub> generation. Explain. 3
- d. Analyse what will happen in F<sub>2</sub> generation with the help of a checker board. 4

6.► With drawing the leg immediately after a thorn prick, removing the hands when exposed to fire, involuntary closure of the eyelids when something gets in the eye etc. are all same kinds of behaviours.

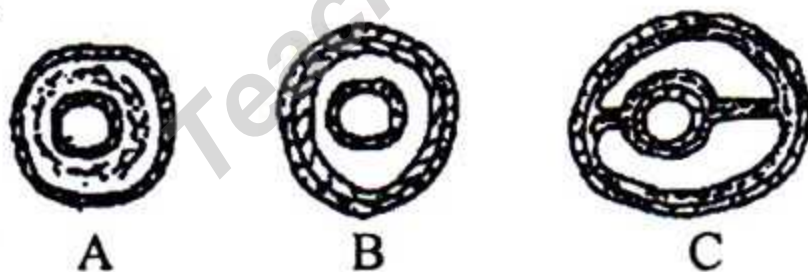
- a. What is diaphragm? 1
- b. Mention the physical characteristics of boys which are expressed during puberty. 2
- c. What is the type of behaviours of the incidents mentioned in the above stem? 3

- d. Salivation in dogs associated with the ringing of the bell is not similar to the incidental behaviours mentioned in the above stem. -Justify it. 4

7.► Teacher was describing the different cells of ectoderm and endoderm of the mythical creature Hydra. He said, "Every cell has different functions to do. For example- prey, digestion, defence, receiving sensory impulse etc."

- a. What is ommatidium? 1  
b. Why hydra is called bi-layered organism? 2  
c. Describe the structure of the cell related to preying, mentioned in the stem. 3  
d. In the above stem, distribution of labour is seen among the cells responsible for preying. Analyse it. 4

8.► Look at the following figure and answer the following questions.



- a. What is cnidocyte? 1  
b. What do you mean by the fishes of carp type? 2  
c. Mention the characteristics of the animal group that is indicated by the cross section 'B' in the above stem. 3  
d. Which one is the higher animal among Animals having A,B,C characteristics in the above 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. What are the phases of the immune system in the human body?

- (a) 3 (b) 4  
(c) 5 (d) 6

2. The parts of the middle ear of human body —

- i. tympanic membrane  
ii. eustachian tube  
iii. ossicles

Which one is correct?

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

3. Which one of the following series is correct?

- (a) pulmonary vein → left ventricle → left atrium → aorta.  
(b) pulmonary vein → left atrium → left ventricle → aorta.  
(c) pulmonary vein → aorta → left atrium → left ventricle  
(d) left ventricle → left atrium → aorta → pulmonary vein

4. ★ The no. of chambers in the brain —

- (a) 3 (b) 4  
(c) 5 (d) 6

5. Which one is correct in case of kidneys?

- i. concave part is called hilus.  
ii. the whole part is covered by a capsule  
iii. left kidney is situated slightly above than the right kidney.

Which one is correct?

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

6. Which one is the example of asymmetry?

- (a) Volvox  
(b) Pila  
(c) Hydra  
(d) Julus

7. ★ From where Ptyalin is secreted?

- (a) stomach  
(b) salivary gland  
(c) liver

(d) pancreas

8. Which one is the instinctive behaviour of animals?

- i. Spider building web  
ii. Tailorbird making its nest  
iii. Salivation in dogs

Which one is correct?

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

Answer questions no 9 and 10 from the following stem:



9. What is the name of the organ shown in the stem?

- (a) Volvent  
(b) Stenotile  
(c) Streptoline glutinant  
(d) Stereoline glutinant

10. The characteristics of the figure —

- i. presence of barbeul  
ii. secretes hypnotoxin  
iii. butt is wide

Which one is correct?

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

11. Maximum portion of the glomerular filtrate is reabsorbed in which part?

- (a) proximal convoluted tubule.  
(b) loop of Henle  
(c) distal convoluted tubule  
(d) collecting duct

12. ★ Which one is the exoskeleton of the head of the Grasshopper?

- (a) flagellum (b) pedicle  
(c) scape (d) frons

13. ★ Which of the following organ is supplied by the Coronary arteries?

- (a) lungs (b) liver  
(c) kidneys (d) heart



14. Which of the following looks like a long rod-shaped?

- (a) tibia (b) fibula  
(c) femur (d) humerus

Answer the question no 15 on the basis of the following stem:



15. What is the name of part X in the stem?

- (a) sinus venosus (b) atrium  
(c) ventricle (d) bulbous arteriosus

Answer the question no 16 and 17 on the basis of the following stem.

Sohel is a normal man. Recently he married a woman named Sumi who is also normal but carries the gene of colour blindness.

16. According to the stem, Sumi's genotype will be —

- (a)  $X^C X$  (b)  $X^C X^C$   
(c) XY (d) XX

17. What will be the fate of the male children in the first generation?

- i. all will be colorblind  
ii. 50% colorblind  
iii. 50% normal

Which one is correct?

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

18. How many lobules are there in the right lung?

- (a) 10 (b) 8  
(c) 6 (d) 4

19. Which of the following is an example of the exception of Mendel's 2<sup>nd</sup> law?

- (a) incomplete dominance  
(b) co-dominance  
(c) epistasis  
(d) lethal gene.

20. ★ How many bones are there in the appendicular skeleton?

- (a) 124 (b) 125

- (c) 126 (d) 127

21. Which animal shows zig-zag pattern movement?

- (a) tailorbird  
(b) honeybee  
(c) toad  
(d) stickleback

22. Which of the following flowchart is correct?

- (a) trachea → bronchi → bronchiole → alveolar duct → alveolar sac → alveoli  
(b) bronchi → trachea → bronchiole → alveolar duct → alveolar sac → alveoli  
(c) trachea → alveolar sac → bronchi → alveolar duct → alveolar sac → alveoli  
(d) trachea → alveolar sac → bronchi → bronchiole → alveolar duct → alveoli

23. Which nerve plays role in hearing and balance?

- (a) optic  
(b) oculomotor  
(c) auditory  
(d) vagus

Read the following passage and answer the question no 24 and 25:

During the discussion about the sequence of human life in biology class, the teacher said that fetus is connected to the uterus by an organ.

24. During which month of pregnancy, the organ in the stem is formed?

- (a) 4th (b) 5th  
(c) 6th (d) 7<sup>th</sup>

25. The functions of the organ in the stem are —

- i. gaseous exchange  
ii. helps in digestion  
iii. secretion of the hormone

Which one is correct?

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

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