

Jashore Board-2017

Biology First Paper

Subject Code :

1	7	8
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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. ►




Figure: A



Figure: B

- What is biome? 1
- Discuss the importance and necessity of parthenocarpy. 2
- The animal of the figure 'B' in the stem belongs to which zoogeographical region? Describe the characteristics of the forest particular to that region. Also discuss the properties of the animals living in that region. 3
- "The figure 'A' of the stem has diversified reproduction abilities which help in afforestation"- justify this statement. 4

2. ► Tazri brought a seedling of black rose from Japan. She did some researches in the Plant Laboratory and was able to create several plantlets of the black rose. She also sold and gave away some of the young plants.

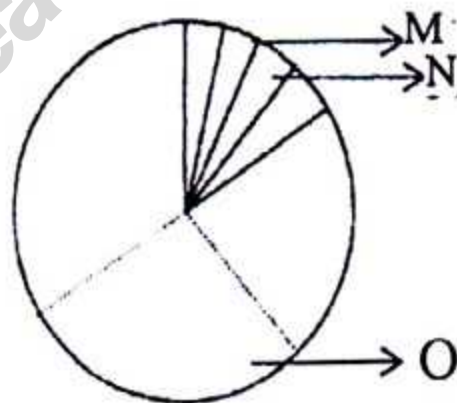
- a. What is pathogen? 1
- b. Describe the lock and key theory of enzyme. 2
- c. Write down the method of creating plantlets in details as mentioned in the stem. Draw necessary diagrams with appropriate labels. 3
- d. The technology mentioned in the stem can create revolutions in some of the agricultural sectors in terms of Bangladesh perspective. Discuss in detail. 4
3. ►  'H' + O₂ Enzyme Energy + CO₂ + water
Water \longrightarrow
- a. Write down the name of the pathogen responsible for the late blight disease of round potato. 1
- b. What do you understand by living fossil? 2
- c. Write down the steps that take place in cytoplasm in order to form three carbon compounds from the "H" compounds mentioned in the stem. 3
- d. Discuss the importance of the reaction that takes place in the green parts of a plant to form "H". 4
4. ► In the class, Abida madam was discussing on the parallel venation of leaves and types of flower spikelet. Later, she showed the image of a plant which had kidney shaped anthers.
- a. What do you understand by isogamous? 1
- b. What are parasites? 2
- c. Write down the identifying characteristics for the second plant mentioned in the later part of the stem. 3

d. Describe the importance of the first plant mentioned in the stem in soil erosion, livestock farming, in food supply and in industries. 4



5. ► The teacher collected a plant from an old build. The plant had unique types of odd-pinnately compound leaves. He said that the plant's reproductive organs are not developed within the plant itself, rather they develop as a separate organ. He took another thalloid gametophyte plant with dichotomous branching.

- a. What does it mean by circinate vernation? 1
- b. Write down the properties of lipid. 2
- c. Describe the unique type of gametophytic structure of the plant as mentioned in the stem. 3
- d. The gametophytic thalloid plant of the stem acts as an ecological indicator- explain the statement along with the position of the plant in the plant classification system. 4

6. ►



- a. What does it mean by crossing over? 1
- b. Why virus is considered as a non-cellular organism? 2

- c. Write down the differences between M and N. 3
- d. Describe the importance of 'O' in the living world. 4
7. ►  During the holy month of Ramadan, everybody likes to have sugar drink and deep-fried foods that tastes good.
- a. What are nucleotides? 1
- b. What lysosomes are called self-destructive organelle (suicide bag)? 2
- c. Write down the chemical structure for the compound that makes the drink sweet. 3
- d. Explain the harmful effects on human body that may be caused by the compound mentioned in the stem which is used to make delicious foods. 4
8. ►  Gani Mia noticed that the potato plants of his potato field started to have some foul smells with a velvet-like layer on some of the leaves. He also noticed that the rice plants had wet and striped marks on the leaves along with the deposition of some sticky substances on them.
- a. What is floral formula? 1
- b. What do you understand by coralloid roots? 2
- c. Write down the necessary measures that can be taken to prevent the first disease as mentioned in the stem. Also, write down the causes of the disease. 3
- d. If the second disease of the stem turns to an epidemic, then what might be consequences on our day to day life? Explain the possible threats and effects. 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. Which one is a sucker organ in parasites?

- (a) rhizomorph (b) stipe
(c) annulus (d) haustorium

2. Which one is the characteristic of a monocot plant?

- (a) root skin has cuticle layer
(b) vascular bundle is present
(c) endodermis absent
(d) number of vascular bundle is 4

3. Which phase of a malaria parasite has many nuclei?

- (a) schizont (b) sporozoite
(c) trophozoite (d) oocyst

Read the following passage and answer the questions no. 4-5:

Plants can be divided into two categories depending on the carbon reduction pathway. Mango and jackfruit fall into the first category where corn and maize belong to the second category.

4. In the second category of plants, CO₂ acceptor is —

- i. phosphoenol pyruvic acid
ii. ribulose 5 phosphate
iii. iribulose-1, 5 biphosphate

Which one is correct?

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

5. The second category plants have higher yield than the first category plants, because the second category plants have —

- i. chloroplast in their bundle sheath
ii. chloroplast is absent in their mesophyll tissue
iii. the ability to tolerate high temperature

Which one is correct?

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

6. Which enzyme is used to ligate DNA fragments?

- (a) restriction (b) helicase

(c) polymerase (d) ligase

7. ★ Anaerobic respiration is a characteristic of-

- (a) *Ulothrix* (b) *Escherichia coli*
(c) *Riccia* (d) *Agaricus*

8. *Pteris* (fern) plant —

- (a) is flowering
(b) is gametophytic
(c) has vascular bundle
(d) is thalloid

9. Which one of the following pairs has similarities?

- (a) ADP and ATP
(b) RNA and ATP
(c) RNA and ADP
(d) RNA and FAD

Answer the questions no. 10-11 according to the stem below:



Fig: X



Fig: Y

10. Which one of the following diseases is caused by the X of the figure?

- (a) tuberculosis (b) pox
(c) measles (d) polio

11. Both X and Y of the stem is—

- (a) prokaryotic
(b) motile
(c) surrounded by cell wall
(d) detritivore

12. Which one of the following algae has node and internode?

- (a) *Ulothrix* (b) *Chlorella*
(c) *Chara* (d) *Volvox*

13. Which one of the following is an inert cytoplasmic substance?

- (a) ribosome (b) lysosome
(c) enzyme (d) plastid

14. Glucose 6 phosphate to Fructose 6 phosphate- which one of the followings influences this reaction?

- (a) hydrolase (b) lyase
(c) ligase (d) isomerase

15. ★ Which one is a characteristic of *Cycas*?

- (a) similar spores
- (b) compound leaves
- (c) triploid endosperm
- (d) gametophytic

Answer the questions no. 16-17 from the following stem:

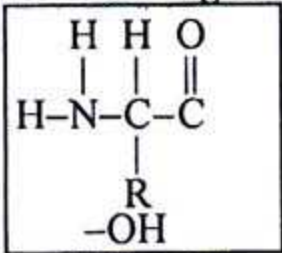


Figure: M

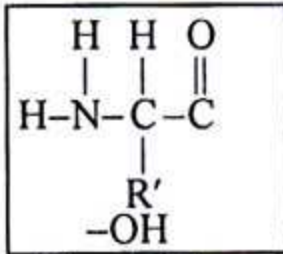


Figure: N

16. Which bond keeps M and N of the stem together?

- (a) peptide
- (b) glycosidic
- (c) ester
- (d) hydrogen

17. Compounds that are formed due to that particular bond are important, because —

- i. structural element of living beings
- ii. transporter of O_2 and CO_2 in living animals
- iii. biocatalysts

Which one is correct?

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

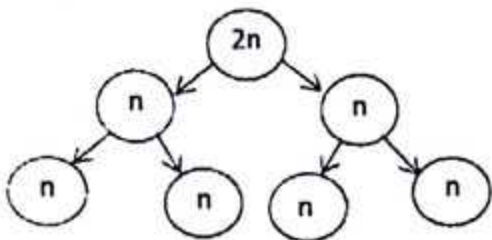
18. How many number of pistils are present in China rose?

- (a) one
- (b) three
- (c) five
- (d) seven

19. ★ Which one of the followings has comparatively weak vascular tissue?

- (a) water lily
- (b) sundari
- (c) china rose
- (d) paddy

Answer the questions no. 20-21 according to the following stem:



20. As shown in the picture, how

many times are the nucleus and chromosome divided?

- (a) nucleus once, chromosome twice
- (b) nucleus twice, chromosome once
- (c) nucleus once, chromosome once
- (d) nucleus twice, chromosome twice

21. For flowering plants, the division occurs in —

- (a) somatic cell
- (b) zygote
- (c) germ cell
- (d) primordial germ cell

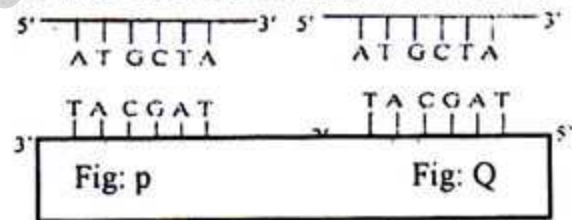
22. An example of the Ex-situ conservation is—

- (a) Zoo
- (b) Sanctuary
- (c) Safari Park
- (d) Echo park

23. ★ Through which one of the followings do the properties of mother plant change?

- (a) bulbil
- (b) germination
- (c) ground layering
- (d) hybridization

Observe the figure carefully and answer the questions no. 24-25:



24. Q of the stem is produced from P, in which way?

- (a) transcription
- (b) translation
- (c) replication
- (d) transduction

25. For the process above —

- i. the new strand is synthesized into the $5' \rightarrow 3'$ direction
- ii. the leading strands require several primers
- iii. the lagging strand requires several primers

Which one is correct?

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

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