

Dinajpur Board-2017

Biology First Paper

Subject Code :

1	7	8
---	---	---

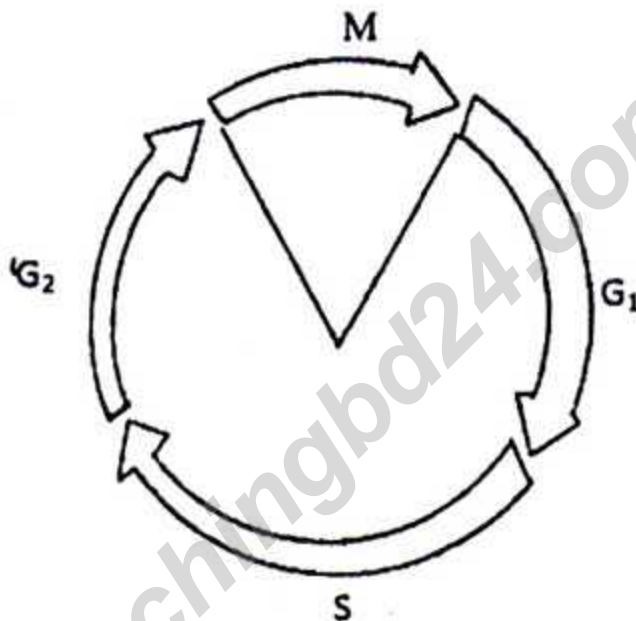
Time — 2 hours 35 minutes

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. ►



- What is synapsis? 1
- Why the process shown in the stem does not occur in meiosis? 2
- Describe the phase of M in the stem in which metakinesis occurs. 3
- The process occurring in S phase of the stem is essential for cell division. Analyse it. 4

2. ► The molecule of organic acid having amino group arrange in chain and make an organic substance. Different nucleic acid is related for the synthesis of this substance in living bodies.

- a. What is monosaccharide? 1
 - b. What do you mean by coenzyme? 2
 - c. Show the bond that occurs during the synthesis of the organic substance mentioned in the stem. 3
 - d. Analyse the last statement of the stem. 4
3. ► ★

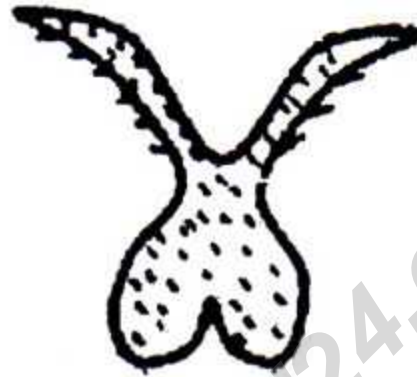


fig- P

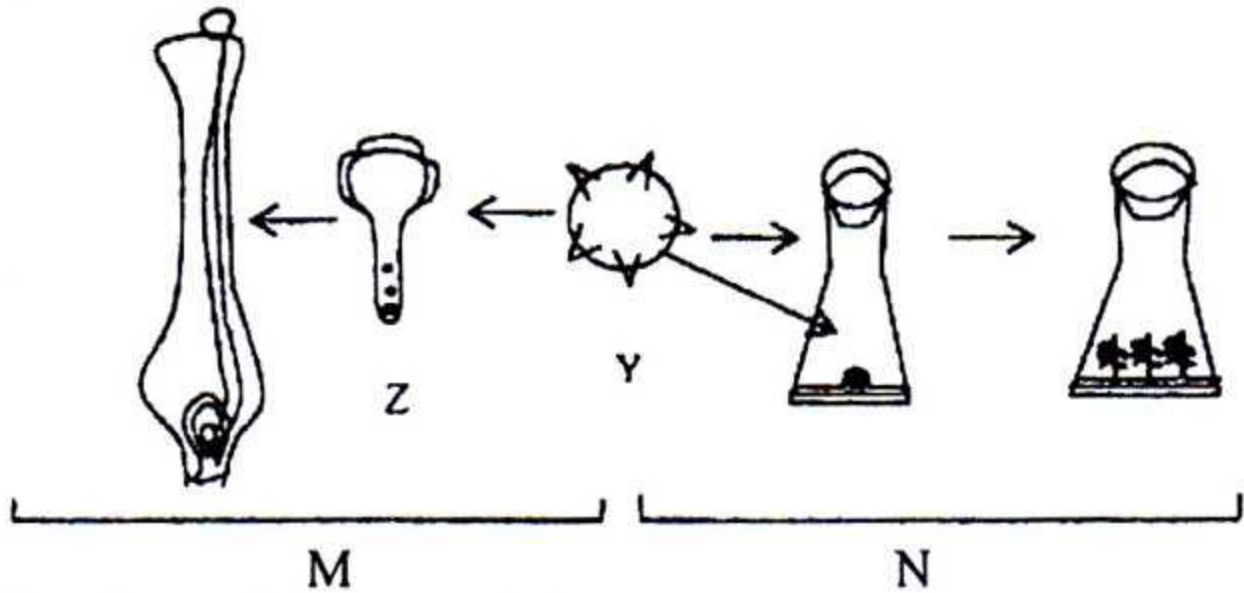
- a. What is stele? 1
- b. What do you mean by spikelet? 2
- c. Write down the identifying points of the family of the plants bearing the part 'P'. 3
- d. There are differences in between the internal structure of root and stem of the plant shown above. Analyse it. 4

4. ► ★ Since last night Tania is having severe diarrhoea and vomiting. For this reason, her body became cold and her blood pressure became low. On the other hand, her friend Rita is suffering from severe fever along with body pain and rashes for few days.

- a. What is capsomere? 1
- b. Why does the malarial parasite need two hosts? 2

- c. Describe the ideal structure of the microorganism, responsible for Tania's disease. 3
- d. The causes and remedies of Rita's disease are different from Tania's disease. Analyse it. 4
5. ► (A) $C_6H_{12}O_6 + 6O_2 + 6H_2O \longrightarrow 6CO_2 + 12H_2O + 38ATP$
 (B) $C_6H_{12}O_6 \longrightarrow C_2H_5OH + 2CO_2 + 2ATP$
- a. What is the name of the first stable compound formed in Calvin cycle? 1
- b. What do you mean by photorespiration? 2
- c. Show the common phase of the process A and B in tabulated form. 3
- d. There is difference in the rate of production of energy and compound in between the A and B process of the stem. Analyse it. 4
6. ► Group 'A'=Thallophytic, green but reproductive organ is unicellular.
 Group 'B'=Thallophytic and not green.
- a. What is crozier? 1
- b. Why *Cycas* is called living fossil? 2
- c. Explain the nature of the distinct plant that is formed by mutual cooperation of the plants included in Group 'A' and Group 'B' in the stem. 3
- d. Besides dissimilarities, similarities are also present in the plants included in Group 'A' and Group 'B' in the stem- Analyse-it. 4

7. ▶ ★



- What is parthenogenesis? 1
- What do you mean by genome sequencing? 2
- Describe the process of production of fig-Z from fig-Y in the stem. 3
- Analyse with cause, which one is appropriate for producing the variation between the process M and N of the stem. 4

8. ▶



fig : P

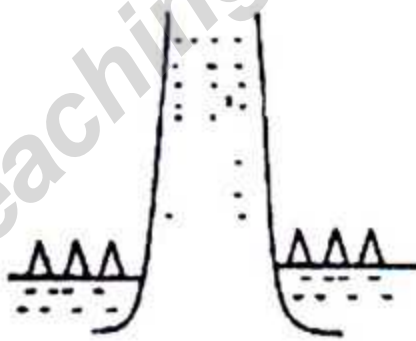


fig : Q

- Write down the scientific name of an almost extinct plant of Bangladesh. 1
- Which kind of plants can be selected for coastal green boundary? 2
- Write down with causes, which procedure is appropriate for conserving the trees Q in the above stem. 3
- Though the plants P and Q are born in different environments, there are similarities in their adaptation process. Analyse it. 4

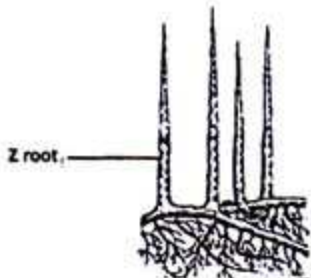
Time — 25 minutes

[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. In which industry, SIT technology is used?

- (a) Pharmacy (b) Agriculture
(c) Garments (d) Food

Look at the following picture and answer the question no 2 and 3:



2. In which of the plants, Z root is seen?

- (a) Xerophytes
(b) All aquatic plants
(c) Halophytes (d) Mesophytes

3. Z root helps plants for—

- i. Transpiration
ii. Photosynthesis
iii. O₂ transportation

Which one is correct?

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

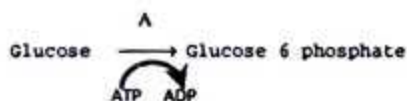
4. ATP is produced in the electron transport system—

- i. by oxidation of NADH₂
ii. by oxidation of Cyt.b
iii. by oxidation of Cyt.a

Which one is correct?

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

5.



Which enzyme acts on A in the equation?

- (a) Mutase (b) Inolase
(c) Kinase (d) Isomerase

6. Ex-Situ conservation is —

- i. Botanical garden

ii. Seed bank iii. Safari Park

Which one is correct?

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

7. Chromosomal dance is seen in which phase of cell division?

- (a) Prophase
(b) Prometaphase
(c) Metaphase
(d) Anaphase

8. What is the part of pre mRNA called in which translation occurs?

- (a) Exons (b) Introns
(c) Splicing (d) Muton

9. Which one is the placentation of Malvaceae family?

- (a) Basal (b) Superficial
(c) Prietal (d) Axile

Answer the question no 10 and 11 from the passage below:

In between the two mosquito-borne diseases, platelets in blood are destroyed in one disease and anaemia is seen in another disease.

10. What is the name of the first disease in the stem?

- (a) Cholera (b) Malaria
(c) Dengue (d) Influenza

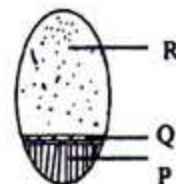
11. The more symptoms which are seen in case of the second disease —

- i. Liver enlargement.
ii. Severe feveer with shivering
iii. Loss of appetite with nausea

Which one is correct?

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

Answer the question no 12 and 13 from the picture below:



12. What is the name of the part 'Q'?

- (a) Xylem (b) Phloem
(c) Cambium (d) Pericycle

13. The characteristics of P and R are —

- i. Forms ascular bundle
- ii. Helps in transportation
- iii. The nature is hydrocentric

Which one is correct?

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

14. Which organelle helps in cell plate formation during cell division?

- (a) Golgi bodies
- (b) Ribosome
- (c) Microtubules
- (d) Lysosome

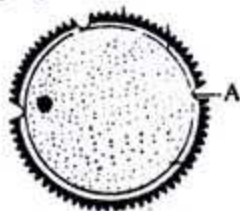
15. Which enzyme works in the place 'A' while converting Xylulose 5P

\xrightarrow{A} into Ribulose 5 phosphate?

- (a) Transferase
- (b) Epimerase
- (c) Isomerase
- (d) Carboxylase

16. What is the leaf called that produces Sori?

- (a) Capsule
- (b) Stomium
- (c) Sporophyll
- (d) Annulus



17. The main chemical component in A of the above picture is —

- (a) Cellulose
- (b) Cutin
- (c) Protein
- (d) Lipid

Read the following passage and answer the question no 18 and 19:

A and B are two organisms. A can produce its own food whereas B can't produce food. But both the organisms are thalloid. They transform into another organism named C.

18. The organism C in the above passage is —

- (a) Algae
- (b) Fungi
- (c) Moss
- (d) Lichen

19. Which one is correct in case of B?

- i. Centric
- ii. Pre centric
- iii. Parasite

Which one is correct?

- (a) i
- (b) ii

- (c) i and iii
- (d) ii and iii

20. Which one is the start codon of mRNA in genetic code?

- (a) Methionine
- (b) Serine
- (c) Valine
- (d) Leucine

21. In which subphase, the homologous chromosomes become paired?

- (a) Leptotene
- (b) Zygotene
- (c) Pachytene
- (d) Diplotene

22. In glycosidic bond the substances produced are —

- i. Disaccharide
- ii. Oligosaccharide
- iii. Polysaccharide

Which one is correct?

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

Answer the question no 23 and 24 from the passage below:

M is a special reproductive process in which ovum is transformed into an embryo without any fertilisation. N is another type of reproduction in which desired variety is produced from the body parts.

23. What kind of reproduction is M ?

- (a) Sexual
- (b) Apogamy
- (c) Parthenogenesis
- (d) Apospory

24. What is the name of the process for making the desired variety of N?

- (a) Branch grafting
- (b) Ground layering
- (c) Air layering
- (d) Paired grafting

25. What is the respiratory quotient of glucose in case of aerobic respiration?

- (a) 0.71
- (b) 1
- (c) 1.33
- (d) 4

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