

Model Question of HSC Examination 2020

Biology First Paper

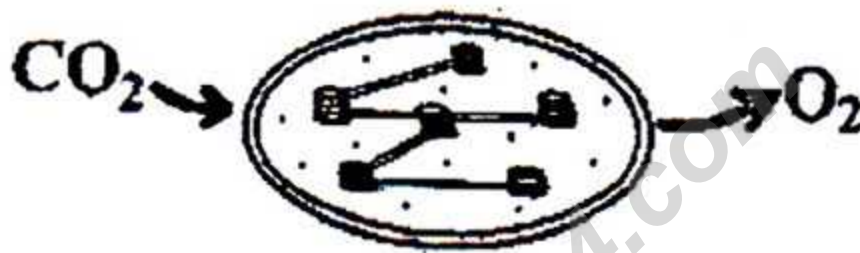
Subject Code :

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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.]

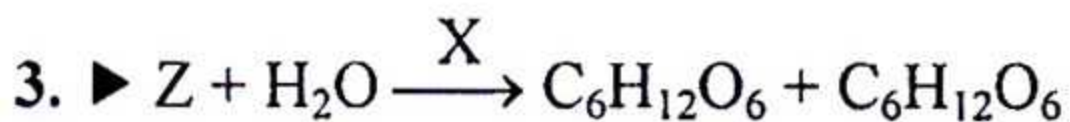
1. ★



- a. What is nucleoside? 1
- b. What does pyramid of biomass mean? 2
- c. Explain the structure of the given organelle. 3
- d. Analyze the importance of the indicated process. 4

2. ► Asad at Biology class learned that through a special type of cell division, some organisms having 16 pairs of chromosome will convert into the cells having only 16 chromosome in each with changed segments.

- a. What is Pericycle? 1
- b. What does it mean by limiting factor? 2
- c. Explain how the indicated new cells were modified. 3
- d. Analyze the importance of the indicated cell division. 4



- a. What is living fossil? 1
- b. What does it mean by merozygote? 2
- c. Explain how 'X' works on 'Z' to produce the products on the above stem. 3
- d. 'X' plays diversified role in our daily life— analyze. 4

4. ► There are some microscopic prokaryotes in the nature. Their shape, size and nutritional habit are also different. Through a special reproduction process they can change their characteristics of new generation. They plays important role in different activities.

- a. What is the scientific name of the pathogen of blight disease of rice? 1
- b. What does it mean by alternation of generation? 2
- c. Explain the mechanism how the indicated organisms are changing characteristics. 3
- d. Evaluate the beneficial role of the organism. 4

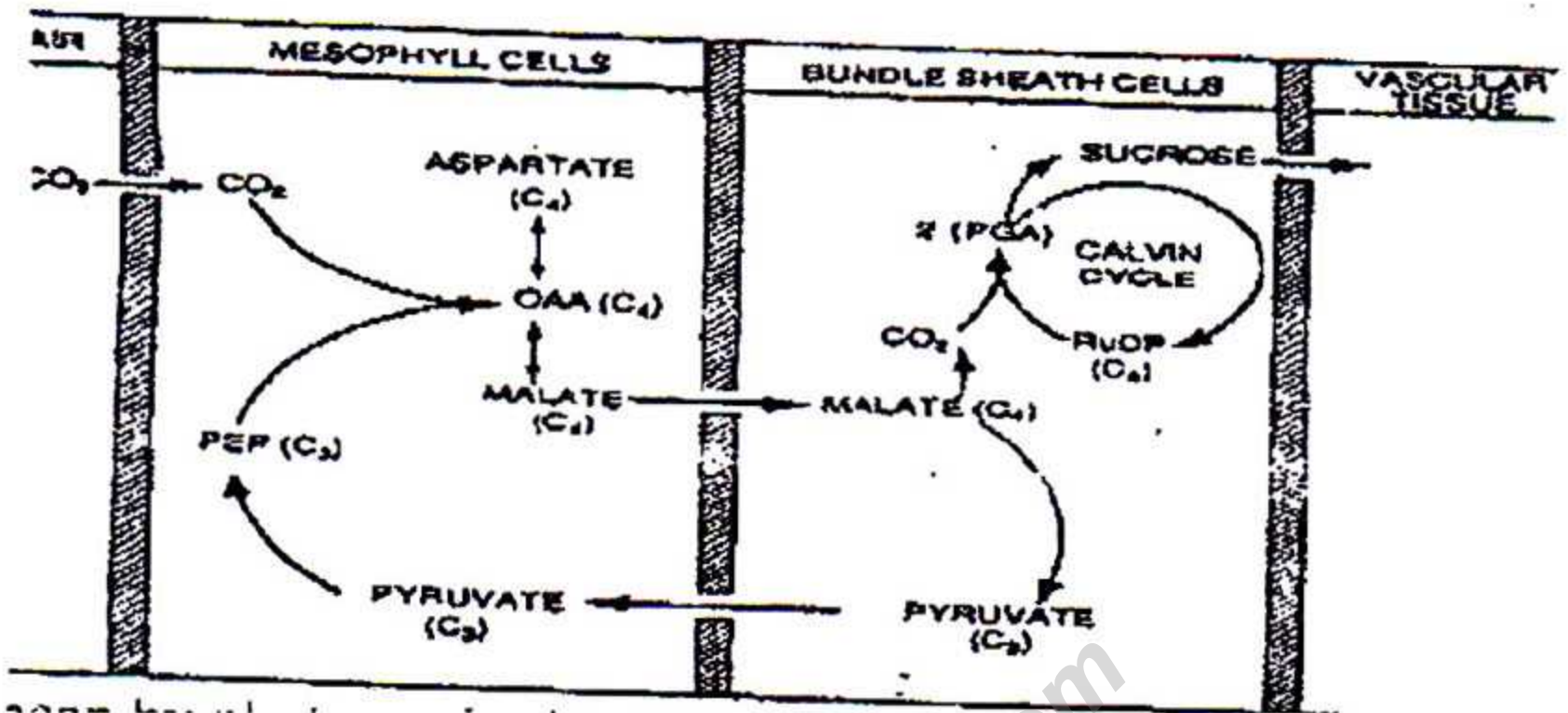
5. ★ In the biology class Kabir learned that one type of protozoa completes its asexual and sexual life cycle with the help of intermediate and definitive host respectively. He also learned that it causes serious fever disease of ours.

- a. What is Prions? 1
- b. Why do we say all protein is not enzyme? 2
- c. Explain the difference between two above mentioned life cycle. 3
- d. We can prevent the indicated disease— analyze. 4

6. ► Kamal collected two flowering plants. Leaf of the first plant is long and narrow, leaf base enclosed the stem and roots are adventitious. The second plant has solitary big flower with mucilage. He wanted to know to his teacher how the families can be identified. Teacher told him to observe the characteristics of leaf and different parts of the flower.

- a. What is synopsis? 1
- b. What does leading strand of DNA mean? 2
- c. Explain— how will you differentiate the two plants morphologically. 3
- d. 'Both the families of the above plants are important to human beings'— evaluate the statement. 4

7. ★



- What is Lenticel? 1
- What does it you mean by photorespiration? 2
- Explain about the type of cycle as indicated in the stem. 3
- Indicated process is controlled by some factors— analyze. 4

8. ★ There is a special forest, situated in the south-western side of Bangladesh, which is also a part of world heritage. This forest is directly affected by the tide and ebb at a regular motion. This forest is full of diversified plants and animals.

- What is Biome? 1
- What does double fertilization mean? 2
- Explain how the plants of the indicated forest adapt in natural habitat. 3
- 'Biodiversity of the indicated forest can be preserved easily by *In situ* than *Ex situ*'— analyze with logic. 4

Biology First Paper

Creative Multiple Choice Questions

Marks — 25

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. Components required for initiation complex in translation are—

- (a) mRNA + Ribosome + DNA
- (b) mRNA + Ribosome + Methionine containing tRNA
- (c) mRNA + Ribosome + tRNA
- (d) mRNA + Ribosome + leading strand of DNA

2. Which one is lipid?

- (a) Glutelin
- (b) Histon
- (c) Cholesterol
- (d) Tyrosine

3. Which is found in sweet fruit?

- (a) Fructose (b) Maltose
- (c) Glycogen (d) Lactose

4. Who discovered the life cycle of malaria?

- (a) Ronald Ross (b) Calvin
- (c) Hooker (d) Singer

5. Plant absorbs mineral salt through which process?

- (a) Osmosis (b) Diffusion
- (c) Transpiration (d) Ascent of sap

6. Which is the first product of Krebs cycle?

- (a) Oxaloacetic acid
- (b) Malic acid
- (c) Pyruvic acid
- (d) Citric acid

7. In telophase, due to rehydration—

- i. Chromosome starts uncoiling
- ii. Chromosome looks short & thick
- iii. Cell plate constitutes

Which one is correct?

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

8. Which of the following bacteria helps in killing the insects?

- (a) Clostridium butricum
- (b) Agrobacterium tritici
- (c) Pseudomonas aeruginosa
- (d) Bacillus thuringiensis

9. ★ What does it mean by

bicollateral vascular bundle?

- (a) Cambium → Phloem → Xylem → Cambium
- (b) Xylem → Cambium → Phloem → Cambium → Xylem
- (c) Phloem → Cambium → Xylem → Cambium → Phloem
- (d) Phloem → xylem → cambium

10. Fungi are differentiated from other plants by—

- (a) chitinous cell wall
- (b) eukaryotic cell
- (c) vacuole position
- (d) chromatoplast

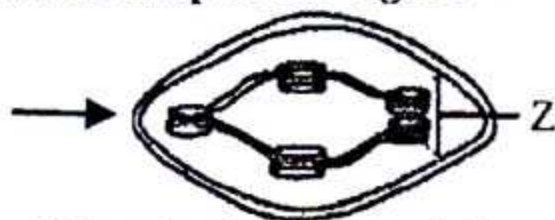
11. Malaria caused by—

- (a) virus (b) bacteria
- (c) protozoa (d) sporozoa

12. Bacterial plasmid is—

- (a) single stranded and circular
- (b) double stranded and circular
- (c) single stranded and linear
- (d) double stranded and linear

Answer the question number 13 and 14 with the help of the figure—



13. What is the name of the part 'Z' of the stem?

- (a) Lamellum (b) Granum
- (c) Stroma (d) Cristae

14. Function of the figure is—

- i. to manufacture starch
- ii. to carry out photophosphorylation
- iii. to carry out respiration

Which one is correct?

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

15. ★ Which of the followings are pyrimidine base?

- (a) Adenine and Thymine
- (b) Guanine and Cytosine
- (c) Cytosine and Uracil
- (d) Adenine and Uracil

16. Where is called the ground tissue of leaf?

- (a) Cortex (b) Mesophyll
(c) Pericycle (d) Pith

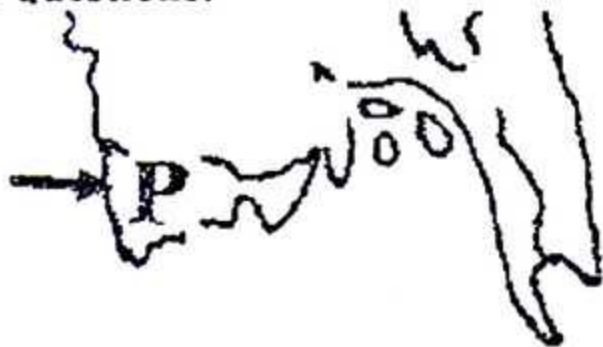
17. What is called the ground tissue of leaf?

- (a) Cortex (b) Mesophyll
(c) Pericycle (d) Pith

18. Which type of chromosomal arrangement will be found in the ovary of Angiosperm before fertilization?

- (a) nn nnn nnn
(b) nnn nnn nn
(c) nnn nn nnn
(d) nnn n nnnn

Look at the figure and answer the next two questions:



19. Which of the following plants are observed in labelled "P"?

- (a) Teak (b) Garan
(c) Chapalish (d) Gamar

20. Plants of this indicated "P" area have

- i. Pneumatophores
ii. Sunken stomata
iii. Extended root system

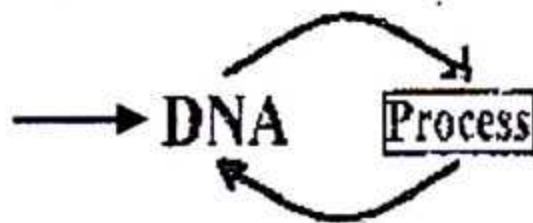
Which one is correct?

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

21. Which one is the characteristics of xerophytes?

- (a) Spngy stem
(b) Sunken stomata
(c) Thin cuticle

(d) Presence of p



22. Which process is indicated through the flow chart?

- (a) Recombination
(b) Replication
(c) Transformation
(d) Evaluation

23. ★ To prepare recombinant DNA need to select—

- i. plasmid as a carrier
ii. ligase enzyme to cut desired DNA
iii. Restriction enzyme

Which one is correct?

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

Read the following line carefully and answer the next two questions:

There are tow type of respiration occurs in living cells. By the oxidation of same amount of glucose much amount of energy is released in aerobic respiration than anaerobic process. The first step is same in both the process.

24. ★ How much number of net ATP is produced in the frist step of the process?

- (a) 8 (b) 10
(c) 38 (d) 40

25. ★ The rate of mentioned process will be—

- i. more if food is insufficient
ii. fast if temperature of is low
iii. slow if the temperature is low

Which one is correct?

- (a) i & ii (b) ii
(c) ii & iii (d) iii

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