Model Question of HSC Examination 2020

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. ▶

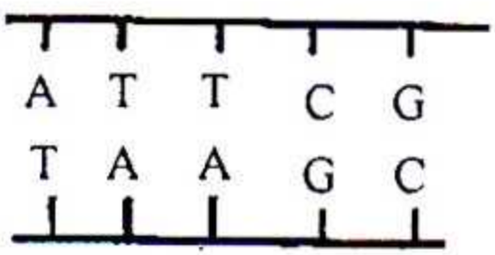


Fig-X

Fig-Y

a. What is codon? 1

b. Which organelle is called the protein factor of cell— Explain. 2

c. Explain the difference between Fig-X and Fig-Y. 3

d. Analyse the role of Fig-Y in protein synthesis. 4

2. ✪ 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 mesophyll tissue? 1

b. What do you mean by Endark & Exarch? Explain. 2

c. Explain how do you differentiate the two plants morphologically? 3

d. 'Both the families of the above plants provide food to man'— Explain. 4

3. ▶ Crop variety– A × Crop variety – B → Hrbridization → Crop variety–C

a. What is Parthenocarpy? 1

b. What is the necessity of a stock for grafting? Explain. 2

c. How will you improve a new variety of rice following the process given on stem? Explain. 3

d. Analyse the importance of development of crop variety–C from Crop variety–A & B to face the challenge of climatic change occurred recently in Bangladesh. 4

4. ✪ 'P' an unicellular, parasitic, mycelial and conidia forming micro-organism. Q is unbranched, filamentous, green and multicellular aquatic micro-organism. Both of the organisms have significant impact on the environment.

a. What is Casperian strip? 1

b. Why water droplets are seen at the edge of leaf blade of tomato plant during morning? 2

c. How 'P' play role in reducing the yield of potato in Bangladesh? Explain. 3

d. Explain the role of 'Q' to keep balance of ecosystem of Kaptai Lake. 4

5. ▶ Flower of plant–X = $EK_5K_{(5)}C_5A_u\underline{G}_{(5)}$

Flower of plant–Y = $P_2A_{3+3}\underline{G}_1$

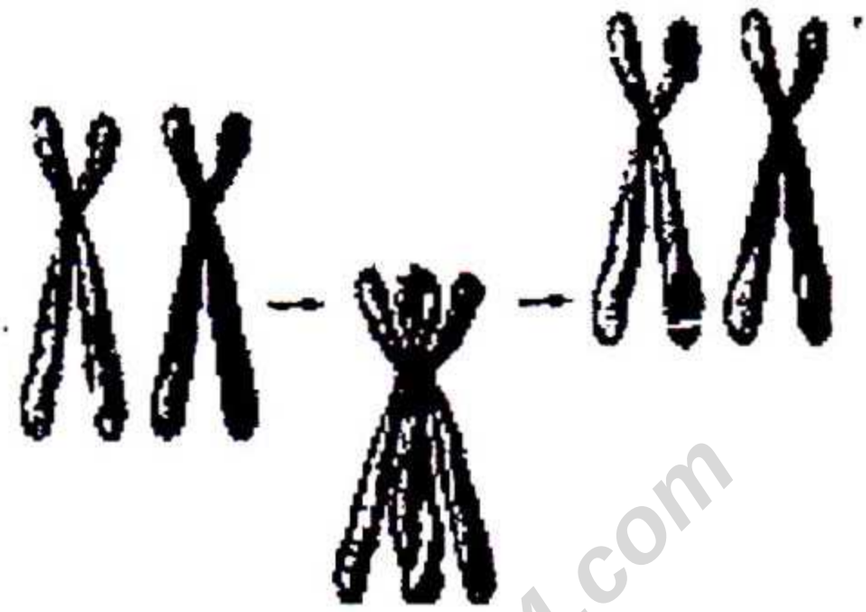
a. What is perianth? 1

b. Why mother axis is necessary to draw a floral diagram? Explain. 2

c. Explain the necessity of identification of family of plant-Y for human welfare. 3

d. Analyse the floral diversity of the families of plant X and Y. 4

6. ▶



a. What is Acrocentric chromosome? 1

b. What do you mean by cell cycle? 2

c. Explain the process happened in above figure. 3

d. Analyze— with explanation the role of above figure in different organisms. 4

7. ✪

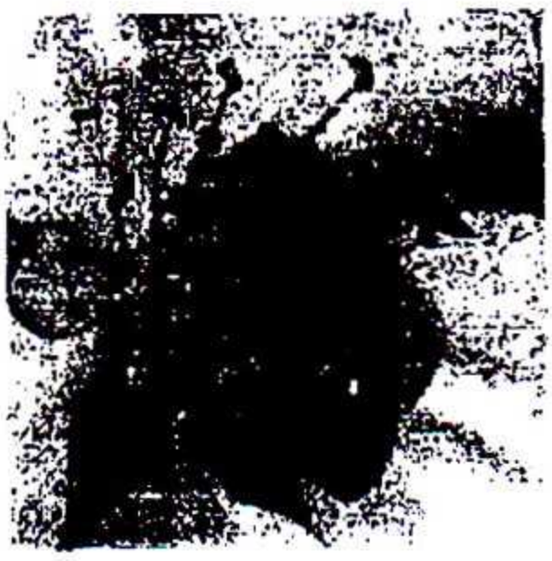


Fig:- 1

Fig:-2

a. What is Resistance-plasmid? 1

b. What do you mean genome sequence? 2

c. Explain— how multiplication process is possible by figure-1. 3

d. Analyze— with explanation which is advanced process among above two figures. 4

8. ▶ Mangroves are a diverse group of trees capable of growing in marine intertidal environments. They do not rely on salt water but are able to tolerate it. According to the IUCN, there are 70 species of mangroves, of which many are threatened with extinction. Mangrove trees have developed a range of incredible adaptations to deal with harsh environment they live in.

a. What is gene? 1

b. Explain reduction division. 2

c. Describe the physical features of the above mentioned forest area in Bangladesh. 3

d. Explain the adaptations of flora and fauna of the above mentioned forest in Bangladesh. 4

Biology First Paper
Creative Multiple Choice Questions

Time — 25 minutes Marks — 25

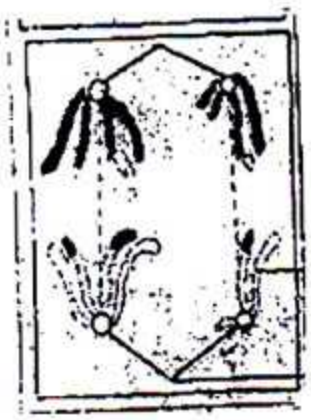
[N.B.—Answer all the questions. Each question carries one mark. Block fully, with a ball-point pen, the circle of the letter that stands for the correct/best answer in the "Answer Sheet" for Multiple Choice Questions Examination. use a ball point pen. Each question carries 1 mark.]

1. Heamoglobin is a—
ⓐ Conjugated protein
ⓑ Phospholipid
ⓒ Enzyme
ⓓ Colesterol

2. In semi-conservative replication—
i. Parents DNA remain unchanged
ii. New characters daughter DNA is produced
iii. Parents DNA act as template
Which one is correct?
ⓐ i & ii ⓑ i & iii
ⓒ ii & iii ⓓ i, ii & iii

3. Apogamy is noticed in which of the following plant?
ⓐ *Allium* ⓑ *Hieracium*
ⓒ *Solanum* ⓓ *Nicotiana*

Answer the questions no 4 & 5



X

Y

4. ✪ What is called the previous stage of 'X'?
ⓐ Prophase
ⓑ Metaphase-1
ⓒ Anaphase-1
ⓓ Telophase-1

5. ✪ The characteristics of 'Y' stage are—
i. Dehydration of water
ii. Ablution of spindle fibers
iii. Appear of nuclolus
Which one is correct?
ⓐ i & ii ⓑ i & iii
ⓒ ii & iii ⓓ i, ii & iii

6. Whcih is the example of bast fibre?
ⓐ Jute ⓑ Palm
ⓒ Coconut ⓓ Cotton

7. Which is the tree of conifer forest?
ⓐ Shal
ⓑ Sundari
ⓒ Pine
ⓓ Maple

8. Which one of the following is a viral disease?
ⓐ Malaria ⓑ Blight of rice
ⓒ Cholera
ⓓ Ring spot of Papaya

9. Which of the following carbohydrate is called fruit sugar?
ⓐ glucose
ⓑ fructose
ⓒ Lactose
ⓓ Sucrose

10. Apogamy is noticed in which of the following plant?
ⓐ *Allium*
ⓑ *Hieracium*
ⓒ *Solanum*
ⓓ *Nicotiana*

11. Which one is Liver wort?
ⓐ Agaricus ⓑ Cycas
ⓒ Riccia ⓓ Pteris

12. Which of the following rice variety is developed by crossing between BR-20 and BR-3?
ⓐ Mukta
ⓑ IRRI-8
ⓒ Birisail
ⓓ Chandina

13. What type of placentation of China rose is?
ⓐ Axile
ⓑ Superficial
ⓒ Parietal
ⓓ Apical

14. In case of Monocot stem—
i. cuticle is present in epidermis
ii. vascular bundle is conjoint
iii. Vascular bundle is radial
Which one is correct?
ⓐ i & ii ⓑ i & iii
ⓒ ii & iii ⓓ i, ii & iii

15. Who discovered 64 type of triplet code for 20 amino acids?
ⓐ Johnson ⓑ Mendel
ⓒ Watson ⓓ Nirenberg

16. In Glycolysis of aerobic respiration—
i. 2 molecules ATP are invested
ii. 2 molecules NADH2 are educed
iii. 2 molecules FADH2 are reduced
Which one is correct?
ⓐ i & ii
ⓑ i & iii
ⓒ ii & iii
ⓓ i, ii & iii

17. Which of the following ion reduce the activity of enzyme?
ⓐ Mg^{++} ⓑ Mn^{++}
ⓒ Zn^{++} ⓓ Fe^{+}

18. ★ Which one reproduces by leaf?
ⓐ Pata bahar ⓑ Pathor kuci
ⓒ Dahlia ⓓ Chondromollika

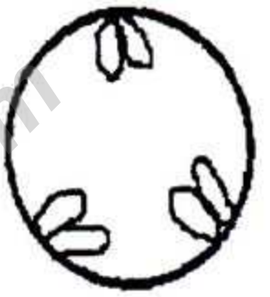
19. From which cell in Pollen tube Sperm is produced?
ⓐ Generative cell
ⓑ Synergid cell
ⓒ Antipodal cell
ⓓ Tube cell

20. Who introduced first Biotechnology?
ⓐ Haberlandt
ⓑ Waksman
ⓒ Karl Ereky
ⓓ Hassinason

21. Which are the characters of Gymnosperm?
i. Endosperm is haploid
ii. Double fertilzation occurs
iii. Fruit does not develop
Which one is correct?
ⓐ i & ii ⓑ i & iii
ⓒ ii & iii ⓓ i, ii & iii

22. What type of vascular bundle are present in Pteris?
ⓐ Bicollateral
ⓑ Collateral
ⓒ Laptocentric
ⓓ Hadrocentric

23. ★



What type of placentation is shown in above figure?
ⓐ Axile
ⓑ Parietal
ⓒ Superficial
ⓓ Free central

24. Characteristics of halophytic plants are—
i. presence of pneumatophores
ii. Presence of juicy leaves
iii. Grows in saline water
Which one is correct?
ⓐ i & ii ⓑ i & iii
ⓒ ii & iii ⓓ i, ii & iii

25. Which country is not included in the Oriental region?
ⓐ Nepal
ⓑ Myyanmar
ⓒ Newzealand
ⓓ Pakistan

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