

Sylhet Board 2016

Biology

Subject Code 138

Times — 2 hours 10 minutes

Creative Essay Type

Full marks — 40

[N.B. — The figures in the right margin indicate full marks. Read the stems carefully and answer the associated questions. Answer any **four** questions.]

1. ★

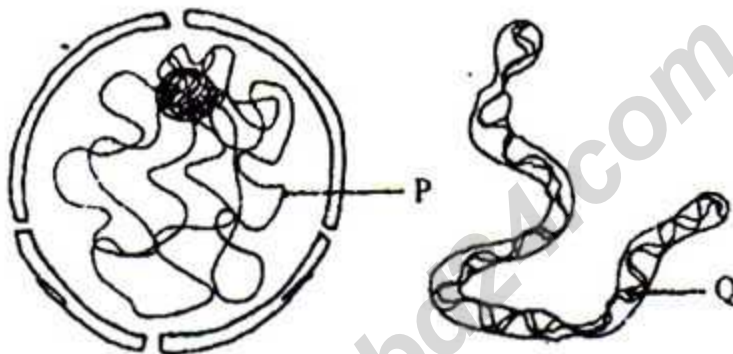


Fig : X

Fig : Y

- What is prokaryotic cell? 1
 - What do you understand by Binomial Nomenclature? 2
 - Describe the chemical structure of 'Q' in Fig : Y. 3
 - Analyze the role of 'P' component determine of human sex. 4
2. ► $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + E$.
- What is photosynthesis? 1
 - How does cancer created? Explain it. 2
 - Describe the cyclic process of the production of 'E' in the cell organelle. 3
 - The process in the stem is indirectly depends on solar energy — Analyze it. 4

3. ►

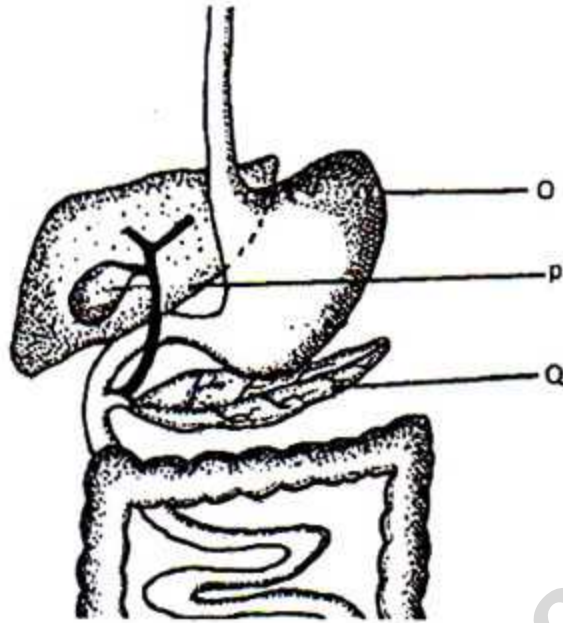


Fig : A

- a. What is mineral nutrient? 1
- b. What do you understand by roughage? 2
- c. Describe how does food digest in the 'O' organ in above Fig : A. 3
- d. Which one is more important among P and Q to digest food— Analyze it. 4

4. ► During playing of cricket, Biplob got several injury to his knee joint. After a through check up doctor said to him that the ligament of knee joint is pulled a part.

- a. What is cartilage? 1
- b. What do you mean by osteoporesis? 2
- c. Describe the structure of injured organ of Mr. Biplob. 3
- d. Analyze the coordination within the functions of different organs of the body with the ligament of injured organ of Mr. Biplob. 4

5. ★

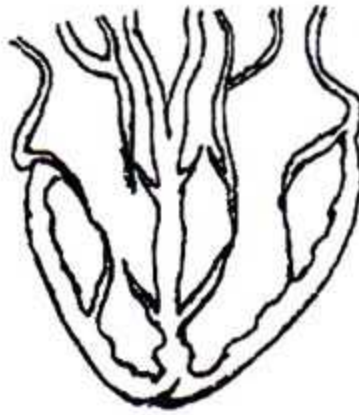


Fig : M

- a. What is dialysis? 1
- b. What do you understand by blood pressure? 2
- c. Write the structural features of the tissue related to the activities of Fig : M. 3
- d. "Appropriate and sufficient food intake, regular exercise and walking make possible to maintain healthy life."— Analyse the relationship of Fig : M with the statement. 4
6. ► Mr. Jamal is a Biotechnologist. He can able to produce huge number of seedlings to use a specific part of a plant. Besides this, he usually transferred or added the DNA to produce the new variety of plants of desired characters. Nowadays both the process are very popular and playing an important role in the economic development of human kind.
- a. What is decomposer? 1
- b. What do you understand by mutualism? 2
- c. Present a labelled diagram of the first process mentioned in the stem. 3
- d. 'The second technology used by Mr. Jamal plays an important role in the economic development— Explain the statement with logic. 4

[NB. 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 the Multiple Choice Questions Examination.]

1. **★** Features of kingdom fungi are—

- Saprophytic
- Nuclear membrane absent
- Chloroplast absent

Which one of the following is correct?

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

2. Which one is related to Endocrinology?

- (a) Fossil
(b) Cell
(c) Hormone
(d) Evolution

3. *Copsychus saularis* is the scientific name of—

- (a) Asian Toad (b) Magpie-Robin
(c) Water lily (d) Jackfruit

On the basis of the following diagrams answer to the questions no. 4 and 5 :—

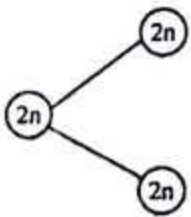


Fig-P

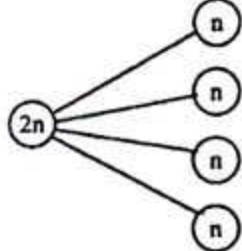


Fig-Q

4. In the Fig. P—

- the mother cell and the daughter cells bear same features
- the number of the chromosome becomes half in the newly produced cells
- chromosomes divide once

Which one of the following is correct?

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

5. Applicable for Fig. "Q"—

- chromosome of daughter cell is haploid
- reductional cell division
- occurs in somatic cell

Which one of the following is correct?

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

6. Plasma lemma has—

- Double-layer
- Carbohydrate and protein
- Microvilli

Which one of the following is correct?

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

7. **★** Which cells are elongated with slender and sharp ends?

- (a) Collenchyma
(b) Tracheids
(c) Sieve cell

(d) Companion cell

8. In which stage the centromere of each chromosome remains on the equator?

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

9. What is the result of irregular cell division?

- (a) AIDS (b) Goiter
(c) Anemia (d) Cancer

10. In which tissue photosynthesis occurs?

- (a) Xylem
(b) Phloem
(c) Parenchyma
(d) Sclerenchyma

11. In which year Watson and Crick was awarded Nobel Prize for the discovery of DNA model?

- (a) 1953 (b) 1961
(c) 1971 (d) 1981

12. **★** What is applicable for Glycolysis—

- Oxygen is required
- 2Mole pyruvic acid is produced
- Occurs in cytoplasm

Which one of the following is correct?

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

13. Which one is the micro nutrient for plant?

- (a) Ca (b) Mg
(c) K (d) Fe

N.B : All the distractors are macro nutrients for plants.

14. In which food many molecule of glucose are present?

- (a) Honey (b) Milk
(c) Sugar (d) Potato

15. When wood comes in contact of water for long period of time it swells up because of—

- (a) Imbibition (b) Diffusion
(c) Osmosis (d) Absorption

16. **★** What does it applicable for RBC?

- Survives 120 days
- Non-nucleated
- Biconcave

Which one of the following is correct?

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

17. What is the % of LDL in our blood?

- (a) 70% (b) 80%
(c) 90% (d) 100%

18. Which one is the largest gland of human body?

- (a) Pancreas
(b) Salivary gland
(c) Liver
(d) Gastric gland

19. ★ Due to bronchitis patient suffer from—

- i. Lip becomes blue
ii. Chest pain
iii. Breathing distress

Which one of the following is correct?

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

20. What is the reason for the colour of urine?

- (a) Urea (b) Uric acid
(c) Creatinine (d) Urochrome

21. What is the reason for kidney failure?

- (a) Cancer (b) AIDS
(c) Diabetes (d) Asthma

22. Where do we find Ball and Socket joint?

- (a) Teeth (b) Shoulder
(c) Elbow (d) Knee

23. ★ What is applicable for osteoporosis—

- i. Calcium deficiency
ii. Children suffer much
iii. Back pain occurs

Which one of the following is correct?

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

24. Insulin is secreted from—

- (a) Pituitary
(b) Islets of langerhans
(c) Gonad
(d) Thymus

25. Which one is day neutral plant?

- (a) Chrysanthemum (b) Jhinga
(c) Dahlia (d) Cucumber

26. ★ Which hormone is a gaseous substance?

- (a) Ethylene
(b) Cytokinin
(c) Gibberellin
(d) Auxin

questions no. 27, 28 and 29 :—

Fertilization → Y → Development

X

Z

27. How many types of X occurs in animal?

- (a) 1 (b) 2
(c) 3 (d) 4

28. Which of the following is applicable for Y?

- i. Diploid cell
ii. Fused cells
iii. Chromosome number n

Which one of the following is correct?

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

29. What is the next stage of Z?

- (a) Morula (b) Blastocyst
(c) Gastrula (d) Cleavage

30. ★ Which one is responsible for composition of skin?

- (a) Soap (b) Fairness cream
(c) DNA (d) RNA

31. Which one is applicable for female?

- (a) 44+XX (b) 44+XY
(c) 22+XX (d) 22+XY

32. Which one is parasitic food chain?

- (a) Algae → Small fish → Hawk
(b) Man → Mosquito → Dengue virus
(c) Dead body → Fungi → Earth worm
(d) Grass → Deer → Tiger

33. Which vaccine is produced from yeast?

- (a) Hepatitis B
(b) Influenza
(c) Diphtheria
(d) Cancer

34. Applicable for tissue culture—

- i. It is a branch of botany
ii. Explants are used
iii. Palm oil production

Which one of the following is correct?

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

35. Which one is the greenhouse gas?

- (a) O₃ (b) CO
(c) CO₂ (d) H₂CO₃

N.B : Green house gas is CO and CO₂. So the answer will be b and c

Read the following stem and answer to the

Ans.	1	(a)	2	(a)	3	(b)	4	(d)	5	(d)	6	(b)	7	(c)	8	(c)	9	(d)	10	(d)	11	(b)	12	(b)	13	(b)	14	(d)	15	(b)	16	(d)	17	(a)	18	(c)	19	(a)	20	(d)	21	(c)	22	(b)	23	(b)	24	(a)	25	(c)	26	(c)	27	(a)	28	(b)	29	(a)	30	(d)	31	(a)	32	(c)	33	(a)	34	(c)	35	(d)
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