

Rajshahi Board 2016

Biology

Subject Code 1 3 8

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. ★



Figure-X

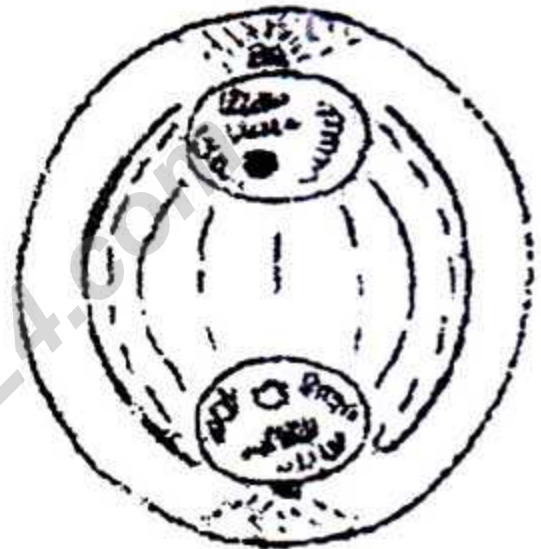


Figure-Y

- What is the scientific name of our national flower? 1
- Why is pituitary gland called main gland? 2
- Draw the immediate late stage of the figure "X". 3
- Describe what problems may arise if the figure 'Y' does not accomplish properly. 4

2. ► When the food reaches at the stomach of digestive system, the food substances are digested by destroying the germs coming mixed with the food materials. Nowadays our digestive system is affected by many diseases because of eating foods mixed with several toxic ingredients.

- What is plant nutrition? 1

- b. What do you mean by basic metabolic rate? Explain. 2
- c. Explain the digestive activities of the digestive system after the activities of the stomach as mentioned in the stem. 3
- d. In order to prevent the physical problems indicated in the stem what measures can be taken? Explain with logic stem. 4

3. ★

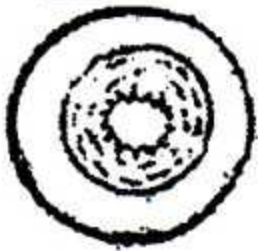


Fig-X



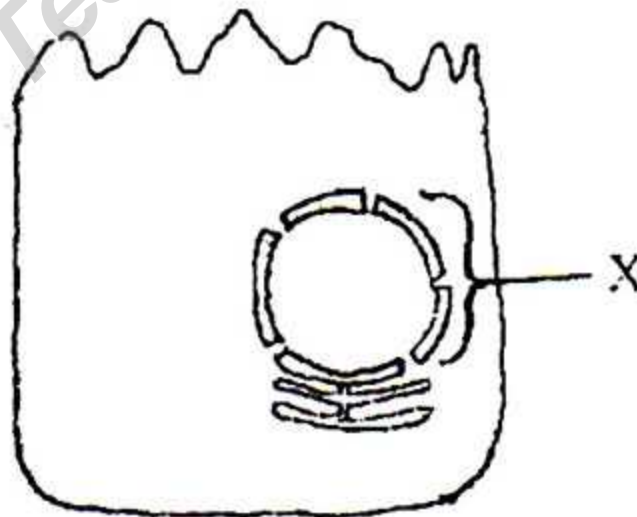
Fig-Y



Fig-Z

- a. Define adhesion. 1
- b. Why transpiration is called necessary evil? 2
- c. Distinguish between Fig 'X' and Fig. 'Y'. 3
- d. In order to maintain a healthy life the role of Fig. 'X', 'Y' and 'Z' inevitable – Explain with logic. 4

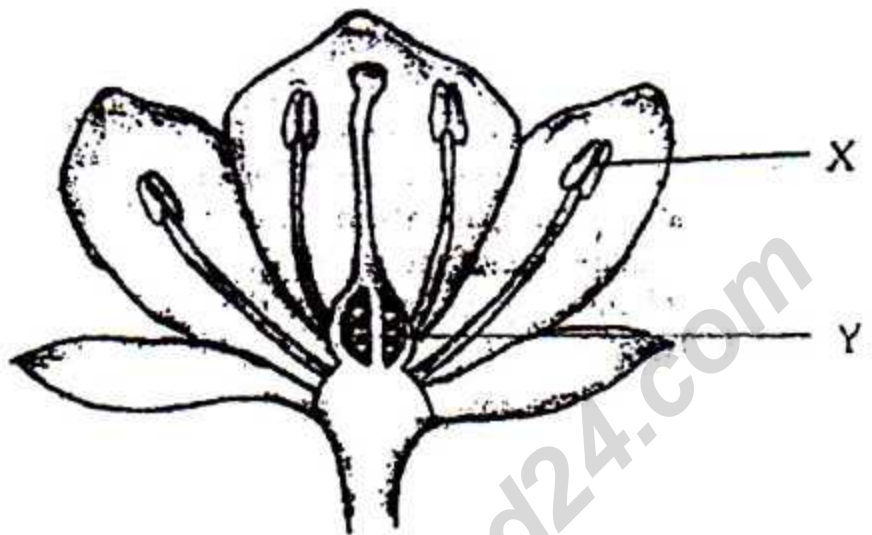
4. ►



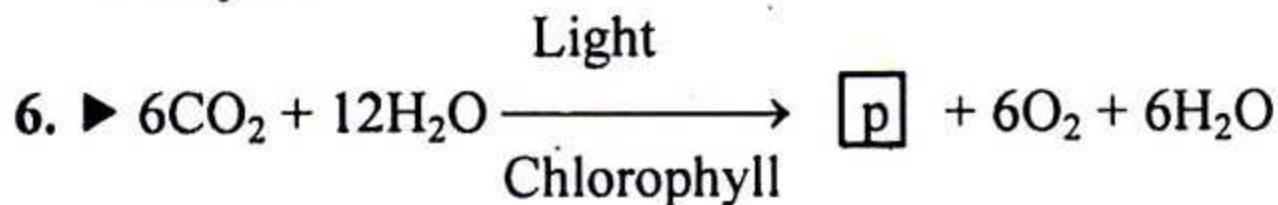
- a. What is called tissue? 1
- b. Why mitochondria is called power house of the cell? 2

- c. In the light of the eukaryotic cell draw a labelled diagram of the Fig. X correctly. 3
- d. Fig. X controls all the biological activities of the cell – Evaluate it. 4

5. ★



- a. What is bone? 1
- b. Explain the photoperiodism. 2
- c. Describe how gametophyte is developed inside labelled 'X' part. 3
- d. Labelled 'X' and 'Y' directly takes part in reproduction – Analyse. 4



- a. What is placenta? 1
- b. What does it mean by mutualism? 2
- c. Explain how "P" is produced in absence of light. 3
- d. Analyse the importance of the given equation for the living world. 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. Which is the branch of Applied Biology?

- (a) Histology (b) Embryology
(c) Ecology (d) Entomology

2. Which is the last step of binomial nomenclature?

- (a) Family (b) Species
(c) Kingdom (d) Order

3. Which is the part of lymphatic system?

- (a) Tonsil (b) Intestine
(c) Ear (d) Appendix

4. Which can protect the cell from the attack of the germ?

- (a) Cell vacuole
(b) Nucleus
(c) Lysosome
(d) Centrosome

5. Which is the shape of meta centric chromosome?

- (a) V (b) L
(c) J (d) I

6. Which tissue is found in the integument of vertebrate animals?

- (a) Simple epithelial tissue
(b) Columnar epithelial tissue
(c) Stratified epithelial tissue
(d) Pseudo stratified epithelial tissue

7. How many ATP is used in glycolysis stage?

- (a) 1 (b) 4
(c) 6 (d) 8

8. In respiration, one molecule of acetyl co-A produced—

- i. 3 molecule NADH_2
ii. 1 molecule FADH_2
iii. 2 molecule CO_2

Which one is correct?

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

9. How many types of amino acids are found in mixed protein?

- (a) 6 (b) 8
(c) 10 (d) 14

10. For balanced diet, a hard working adult female needs—

- i. 200 gm milk
ii. 150 gm leafy vegetables
iii. 25 gm protein

Which one is correct?

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

11. DNA test help in the determination of—

- i. Paternity of child
ii. Maternity of child
iii. Criminal identification

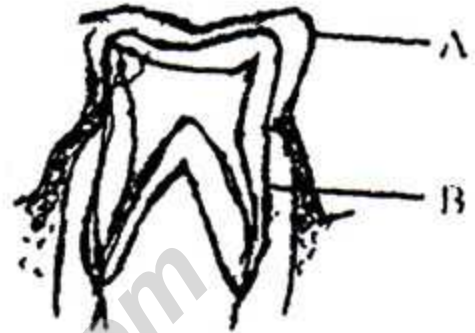
Which one is correct?

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

12. Which scientist designated the process transpiration as "necessary evil"?

- (a) Linnaeus
(b) Curtis
(c) Loey
(d) Gregor Johan Mendel

Observe the following diagram and answer to the questions no. 13 and 14 :—



13. What is the name of B marked part?

- (a) Gum (b) Crown
(c) Cement (d) Enamel

14. In 'A' marked part remain—

- i. calcium carbonate
ii. calcium phosphate
iii. chloride

Which one is correct?

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

15. How many layers consists of heart wall?

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

16. What is called the membrane of lung?

- (a) Glomerulus (b) Pericardium
(c) Capsule (d) Pleura

17. 15 kilocalorie = How much joule?

- (a) 62,700 (b) 62,800
(c) 62,900 (d) 63,700

18. In which vertebrate animals the reproduction rate is very slow?

- (a) Tiger (b) Elephant
(c) Horse (d) Cow

19. What percentage of energy is reduced in every stage of food chain?

- (a) 50—60 (b) 60—70
(c) 70—80 (d) 80—90

20. Symptoms of AIDS—

- i. Rapid loss of body weight
ii. Itching in the whole body
iii. Sometimes cough up blood

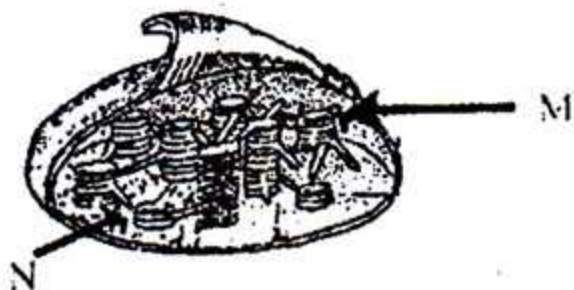
Which one is correct?

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

21. **★** What percentage of water contain in bone?

- (a) 20—30 (b) 30—40
(c) 40—50 (d) 50—60

Observe the following diagram and answer to the questions no. 22 and 23 :—



22. What is the name of 'M' marked part?

- (a) Granum (b) Carbon
(c) Glucose (d) Oxygen

23. The 'N' marked part—

- i. is oxidised
ii. is reduced
iii. both are oxidised and reduced

Which one is correct?

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

24. **★** Where is thyroid gland located?

- (a) Brain (b) Liver
(c) Kidney (d) Trachea

Read the following stem and answer to the questions no. 25 and 26 :—

Julia is 18 years old, her height is 1.75 m, weight is 50 kg. Rana, her younger brother two years junior. He is weak and thin. His weight is 35 kg and height is 112 cm.

25. What is the BMI of Julia?

- (a) 16.33 (b) 26.33
(c) 36.33 (d) 46.33

26. BMR of Rana is how much alorie?

- (a) 555.5 (b) 565.9
(c) 575.5 (d) 996.7

27. How many days the menstrual cycle starts in mother after the child birth?

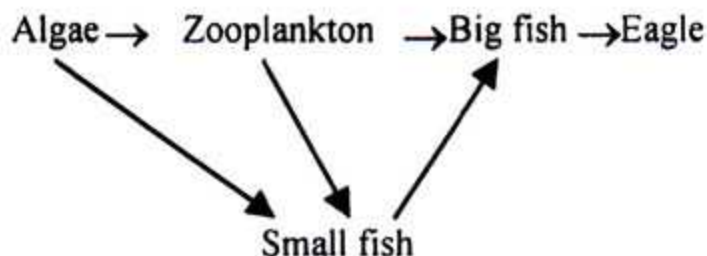
- (a) 25 (b) 30
(c) 35 (d) 45

28. **★** Which is correct sequence of air passage?

- (a) Bronchus→Nasal cavity → Trachea → Larynx→ Pharynx → Alveolus
(b) Alveolus → Bronchus → Trachea → Larynx → Pharynx → Nasal cavity
(c) Nasal cavity → Pharynx → Larynx → Trachea → Bronchus → Alveolus
(d) Nasal cavity → larynx → Pharynx → Trachea → Bronchus → Alveolus

Answer to the questions no. 29 and 30

according to the following stem :—



29. According to the flow chart the food chains are—

- i. Algae → Zooplankton → Small fish → Big fish
ii. Algae → Zooplankton → Big fish → Eagle
iii. Algae → Zooplankton → Eagle → Big fish

Which one is correct?

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

30. How many food chains present in above flow chart?

- (a) 4 (b) 5
(c) 6 (d) 7

N.B : The answer will be 3.

31. **★** What is the colour of the Juice of bile?

- (a) Red (b) Brown
(c) Pink (d) Deep green

32. Which gene is transferred for the increasment of protein in cow milk?

- (a) Protein-A (b) Protein-B
(c) Protein-C (d) Protein-D

33. **★** Which element in blood will be increased due to the kidney failure?

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

Observe the following diagram and answer to the questions no. 34 and 35 :

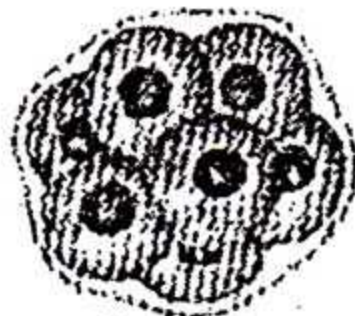


Figure : B

34. What is the name of the Figure-B of the mentioned stem?

- (a) Factus (b) Blastula
(c) Gastrula (d) Morula

35. In embryonic development, the mentioned Figure-B takes how many hours to form?

- (a) 70 (b) 72
(c) 75 (d) 80

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