

**056(E)**

**(MARCH, 2008)**

***Time : 3.00 Hours]***

***[Maximum Marks : 100***

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***Instructions :***

1. Attempt **all** the questions.
2. Follow the instructions.
3. Begin new section on a new page.

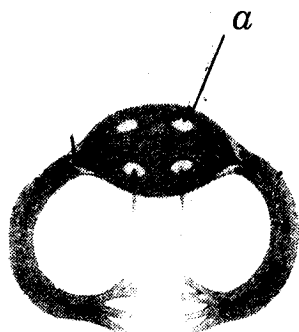
**SECTION - A**

*Question Nos. from 1 to 16 are multiple choice questions. Each carries one mark. Choose the correct answer A, B, C, D from the given alternative responses and write it.*

**16**

1. Before entering into the Krebs's cycle, Pyruvic acid is .....
  - (A) Dehydrogenated and oxidized.
  - (B) Decarboxylated and dehydrogenated.
  - (C) Carboxylated and oxidized.
  - (D) Decarboxylated and oxidized.
2. This substance is needed for synthesis of Chlorophyll.
  - (A) Magnesium
  - (B) Nitrogen
  - (C) Iron
  - (D) Manganese
3. Process in which molecules of any substance move away from a region of their higher concentration to a region of their lower concentration is called .....
  - (A) Transport
  - (B) Permeability
  - (C) Distribution
  - (D) Diffusion

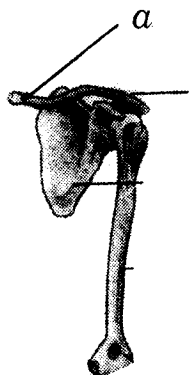
4. It inhibits oxidation of unsaturated fatty acids.
- (A) Vitamin - E  
 (B) Vitamin - A  
 (C) Vitamin - K  
 (D) Vitamin - D
5. Function of the part labelled as 'a' in the given diagram is



- (A) blood through it enters the heart chambers.  
 (B) blood through it flows into thoracic chambers.  
 (C) blood through it flows into ventral sinus.  
 (D) blood through it flows into perivisceral sinus.
6. It is a substance which is acidic and forms in RBC at first hand by entering of atmospheric  $O_2$  at respiratory surface.
- (A)  $KHbO_2$                       (B)  $HHbO_2$   
 (C)  $KHCO_3$                       (D)  $H_2CO_3$
7. Green plants cannot live in this zone.
- (A) Thermocline zone              (B) Profundal zone  
 (C) Limnetic zone                  (D) Littoral zone
8. Which plant is seen in floating stage ?
- (A) Vallisneria                      (B) Ceratophyllum  
 (C) Cyperus                          (D) Salvinia
9. Growth becomes possible by increase in number of cells in .....
- (A) striated muscles              (B) nerve cells  
 (C) lens of eye                      (D) cartilage

10. This type of forest is never totally leafless.
- (A) Temperate deciduous forests.
  - (B) Temperate forests.
  - (C) Taiga
  - (D) Tropical forests.
11. In which plants, flowers produce relatively lower amount of pollen ?
- (A) Wind pollinated
  - (B) Birds pollinated
  - (C) Water pollinated
  - (D) Insect pollinated
12. Its biodiversity and genetical complex is protected by law.
- (A) Buffer zone
  - (B) Transition zone
  - (C) Core zone
  - (D) Forests
13. Only this statement is true to PCR method.
- (A) Culture of pathogenic organism.
  - (B) Identification of antigen and antibody.
  - (C) The specific section of a gene of the pathogenic organism is multiplied with the help of suitable primer.
  - (D) A short polynucleotide chain of the genetic material of the pathogenic organism is utilized.
14. In this type of reproduction innumerable unicellular, uninucleate offsprings are formed within one maternal cell.
- (A) Fragmentation
  - (B) Budding
  - (C) Multiple fission
  - (D) Sporulation
15. If a person does things compulsively against one's own will, the disorder is .....
- (A) Mood disorder.
  - (B) Anxiety disorder.
  - (C) Obsessive compulsive disorder.
  - (D) Attention - deficit disorder.

16. The inner one end of this bone is attached to which part that is labelled as 'a' in the given diagram.



- |             |                      |
|-------------|----------------------|
| (A) Scapula | (B) Humerus          |
| (C) Sternum | (D) Acromion process |

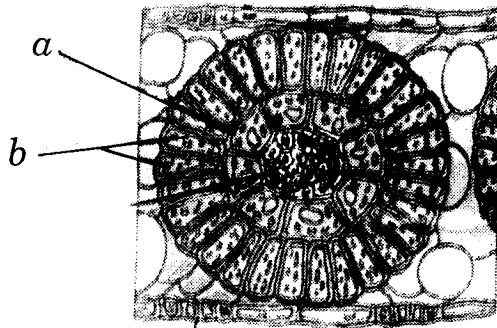
### SECTION - B

*Question Nos. from 17 to 32 are very short answer type questions. Each question carries **one** mark. Give answer in the limit of 1 to 10 words.*

**16**

17. Write two deficiencies that develop due to disorder of Iron in human.
18. Explain the chemical reactions in which pentose sugar is formed from glucose during pentose phosphate path.
19. How does osmo-regulation occur in marine animals ?
20. Give the name of insecticide protein and show from where it is obtained ?
21. What is Trans-membrane transport ?
22. How is the Thoracic lymphatic duct formed ?
23. Write two functions of the substance which is secreted from oxontic cells of gastric glands.
24. 'The leaves of mimosa close and droop when they are touched.' Why ? Explain.

25. Which substances are lacking in Epilimnion and Hypolimnion ?
26. Explain main difference between -  
Incompatibility and Parthenogenesis.
27. Explain the formation of regeneration bud in amphibian animals.
28. Write two examples of free-living nitrogen-fixing bacteria.
29. Explain about the process of Ecesis in plants briefly.
30. Write any two aims for preparing 'Red list'.
31. Natural growth-rate is 5% of one population having 1000 individuals. If the annual birth-rate is 60, then find out the death-rate with the help of the equation of natural growth-rate.
32. Write the name of the reactions that occur in cells which are located as 'a' and 'b' in the following figure.



**SECTION - C**

*Question Nos. from 33 to 44 are short answer type questions.*

**24**

*Each question carries **two** marks. Give answers in the limit of 30 words.*

33. Explain the development of male gametophyte in plant. (Diagram is not required)
34. Explain the course of blood circulation through Heart.

35. 'Agricultural forestry is completely an economic activity'. Give explanation.

**OR**

Explain - 'Phosphorus cycle'.

36. Explain the theory for ascent of sap which is most widely accepted.

**OR**

Write the effects of light on Photosynthesis.

37. 'The increase and decrease in the size of pore of stomata depends on the import and export of water in their guard cells'. Give the explanation of this statement.

38. Explain : Conduction of stimulus during Reflex action.

39. Write difference between : (two points each)

WBC which play an important role in 'allergy' and WBC which play an important role in disease resistance.

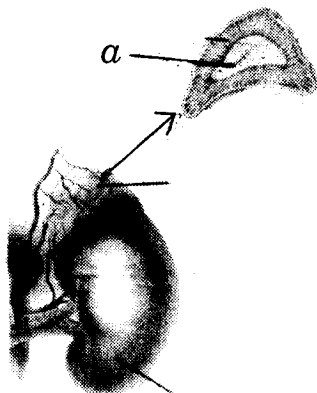
40. Explain the stimulation of Muscle.

41. Explain the digestion of protein by Pancreatic juice.

42. In which aspects genetically modified food differs from traditional food ? Which problems are created by it ?

43. Write the effects of growth-regulator which does not occur naturally in plants.

44. Write the effects of the substance which is secreted from the part that is labelled as 'a' in the given diagram.



**SECTION - D**

Question Nos. from 45 to 52 are short answer type questions.

24

Each question carries **three** marks. Give answers in the limit of 50 words.

45. Describe - Nitrogen fixation (Figure is not necessary).
46. Explain - Oxidative phosphorylation (Chart is not necessary).
47. Explain 'Hypothalamo-Hypophyseal axis' and its function.

**OR**

Describe Atherosclerosis. (Figure is not necessary)

48. Describe with figure - The structure of Tooth.
49. Explain the programmed theories of Ageing.
50. Explain the entire process of ovarian cycle which is controlled by hormones.
51. Explain the mutualistic relationships of plant in which both organisms are benefited.

**OR**

Explain - Soil erosion and depletion of Soil fertility.

52. Describe - Hormone therapy through biotechnology.

**OR**

Write examples of Biopiracy.

**SECTION - E**

20

Question Nos. from 53 to 57 are long answer type questions.  
Each question carries **four** marks. Give answers in the limit of 100 words.

53. Describe the process which takes place in grana regions of chloroplasts and in which an electron transport is called non-cyclic electron transport. (Chart is necessary)

**OR**

Describe the respiratory process which is common in all living organisms and occurs in the cytoplasmic matrix of cells.  
(Chart and equations are necessary)

54. Describe the process of Urine formation.

**OR**

Describe the nervous system of Cockroach. (Figure is not necessary)

55. Describe the development of embryo in flowering plants.

**OR**

Describe Human embryo development.  
(Figure is not necessary in both answers)

56. Write descriptive notes on Immunological disorders.

57. Explain - Depletion of Ozone layer.
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