HA-003-2016047
B. Sc. (Sem. VI) (CBCS) (W.E.F. 2019) Examination
April - 2023
Botany : B-602
(Plant Physiology, Biochemistry, Biostatistic, Microbiology and Biodiversity)
(New Course)

Faculty Code : 003
Subject Code : 2016047

Time : $2\frac{1}{2}$ / Total Marks : **70**

Instructions :
   (1) Attempt all the questions.
   (2) Answer with draw neat and labelled diagram wherever necessary.
   (2) Figures to the right side indicate total marks for the question.

1   (a) Answer the following Objective type questions :   **4**
      (1) The first product of C_4 pathway is _____.
      (2) The most widely accepted theory for ascent of sap is _____.
      (3) How many light-harvesting systems are there in light reaction ?
      (4) The concentration of auxin is highest in _____.

  (b) Answer in brief (any one out of two) :   **2**
      (1) Write a note on : Root pressure theories.
              OR
      (2) Write the physiological functions of Gibberellins. (any four)

  (c) Answer in detail (any one out of two) :   **3**
      (1) Explain – Imbibition theory.
              OR
      (2) Explain in detail C_3 cycle.

  (d) Write a note on (any one out of two) :   **5**
      (1) Describe pentose phosphate pathway.
              OR
      (2) Describe – Auxin in detail.

2 (a) Answer the following Objective type questions :   **4**
  (1) Which class of carbohydrates is considered as non-sugar ?
  (2) Mention True or False : Fatty acids are amphipathic by nature.
  (3) What is a bond between amino acids in a protein called ?
  (4) What is the name of the major storage form of carbohydrates in animals ?

  (b) Answer in brief (any one out of two) :   **2**
  (1) Write a note on – Phospholipids.
  OR
  (2) Write any four functions of protein.

  (c) Answer in detail (any one out of two) :   **3**
  (1) Write any six functions of carbohydrates.
  OR
  (2) Give information about enzyme inhibition.

  (d) Write a note on (any one out of two) :   **5**
  (1) Explain classification of monosaccharides.
  OR
  (2) Explain primary structure of protein.

3 (a) Answer the following objective type questions :   **4**
  (1) Define – Populations.
  (2) The distribution that is formed by all possible values of a statistics is known as _____ .
  (3) Explain the term – Mode.
  (4) Find out the mode of the following data :
      12, 15, 16, 12, 16,14,15, 10, 11, 16, 13, 14, 15, 16, 12, 10, 11,13, 12, 16, 15, 14, 16, 10, 11, 16

  (b) Answer in brief (any one out of two) :   **2**
  (1) Write the merits of mean.
  OR
  (2) Find the mean of the following distribution.

x	4	6	9	10	15
f	5	10	10	7	8

  (c) Answer in detail (any one out of two) :   **3**
  (1) Describe – Lottery method.
  OR
  (2) There are 39 plants in the garden. A few plants were selected randomly and their heights in cm were recorded as follows: 51, 38, 79, 46 and 57. Calculate the standard deviation of their heights.

(d) Write a note on (any one out of two) :   5
   (1) The amount of rainfall in a particular season for 6 days are given as 17.8 cm, 19.2 cm, 16.3 cm, 12.5 cm, 12.8 cm and 11.4 cm. Find its standard deviation.

OR

   (2) The following data are the height of the 10 plants. Calculate the standard deviation.
   60, 60, 61, 62, 63, 63, 63, 64, 64, 70

4 (a) Answer the following objective type questions :   4
   (1) Counter stain used in gram staining _____.
   (2) What is the role of agar ?
   (3) Which main genus of bacteria produced vinegar ?
   (4) Nichrome loop wire is used in which pure culture techniques ?

(b) Answer in brief (any one out of two) :   2
   (1) Write a note on – pour plate method.

OR

   (2) Write only flow chart of gram staining method,

(c) Answer in detail (any one out of two) :   3
   (1) Explain – Structure of E.coli bacteria.

OR

   (2) Write a note on – Dry heat sterilization methods.

(d) Write a note on (any one out of two) :   5
   (1) Describe wet heat sterilization methods.

OR

   (2) Explain – Structure of T_4 phage.

5 (a) Answer the following objective type questions :   4
   (1) What is the full form of MAB ?
   (2) Which was the first biosphere reserve of India established in _____.
   (3) We can find the Ranthambore National Park in _____ state.
   (4) Pachmarhi Biosphere Reserve is located in which state ?

(b) Answer in brief (any one out of two) :   2
   (1) Write a note on : Beta – diversity.

OR

   (2) Write the silent features of National Parks.

(c) Answer in detail (any one out of two) :   **3**
   (1) Write the objectives of Biosphere Reserve Programme.
                    OR
   (2) Give information about key stone species in conservation strategy.

(d) Write a note on (any one out of two) :   **5**
   (1) Discuss the causes of extinction of species leads by human activity.
                    OR
   (2) Describe different zones of biosphere reserves.

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