

**SECOND SEMESTER B.Sc. DEGREE EXAMINATION, MAY 2017**

(CUCBCSS—UG)

Core Course—Botany

**BOT 2B 02—RESEARCH METHODOLOGY AND MICRO TECHNIQUE**

Time : Three Hours

Maximum : 80 Marks

**I. Answer all questions. (1 mark each) :**

Choose the correct answer :

1 The source of illumination in an electron microscope is :

(Light, Photon, Neutron, None of these).

2 Which of the following is a killing agent ?

(Formalin glycerine, Carnoys fluid, Safranin).

3 The abbreviation pH stands for :

(Portions hydrogen, Portions hydroxyl, Potenz hydrogen, Potenz hydroxyl).

4 Hypothesis is a tentative.

(Guess, theory, Solution, Thesis).

Fill in the blanks :

5 Science is the art of the \_\_\_\_\_.

6 \_\_\_\_\_ is a central tendency.

7 TEM stands for \_\_\_\_\_.

8 DPX is a \_\_\_\_\_.

Answer in a single word :

9 What is the name of the device used to measure microscopic objects ?

10 Who devised the *t*-test ?

(10 × 1 = 10 marks)

Turn over

II. Answer *all* questions. Short answer. (2 marks each) :

- 11 Differentiate between mode and median.
- 12 Differentiate between killing and fixing.
- 13 Differentiate between an acid and a base.
- 14 What is adsorption chromatography ?
- 15 Name any 3 renowned journals in plant science.
- 16 What is the full form of LCD ?
- 17 Mention the name of a vital stain ?
- 18 What is the purpose of double staining.
- 19 What is a camera lucida ?
- 20 What is molarity ?

(10 × 2 = 20 marks)

III. Answer any *six* questions. Short Essays. (5 marks each) :

- 21 What is probability ? Describe the multiplication rule in probability.
- 22 What is Chi square test ? How does it differ from *t*-test ?
- 23 Briefly describe the technique of maceration.
- 24 What is coefficient of variation ? Why is it important in determining sample size.
- 25 Explain the principle of centrifugation.
- 26 Differentiate between type 1 and type 2 errors.
- 27 Write the steps in TBA series.
- 28 Differentiate between stage micrometer and ocular micrometer.

(6 × 5 = 30 marks)

IV. Answer any *two* questions. Essay. (10 marks each) :

- 29 Describe the various graphical means in the representation of data.
- 30 Describe the basic assumptions and steps in scientific methodology.
- 31 What is a stain ? How are the stains used in micro technique classified ?

(2 × 10 = 20 marks)