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**3 (Sem 3) BOT M2**

**2015**

**BOTANY**

**(Major)**

**(Instrumentation and Laboratory Techniques)**

Paper : 3.2

Full Marks – 60

Time – Three hours

The figures in the margin indicate full marks  
for the questions.

1. Fill in the blanks : 1×7=7

(a) Liquid medium that does not contain  
solidifying agent (agar) is called \_\_\_\_\_.

(b) \_\_\_\_\_ fungicide is used in the herbarium  
preparation and maintenance.

(c) A pH meter consists of a pair of electrode,  
one is glass electrode and the other is \_\_\_\_\_.

[Turn over

(d) Somogyi's reagent is used for quantitative determination of \_\_\_\_\_.

(e) The full form of HPLC is \_\_\_\_\_.

(f) To separate substances of different density \_\_\_\_\_ is used.

(g) Living cell can be observed under \_\_\_\_\_.

2. Define the following terms :  $2 \times 4 = 8$

(a) Fixatives

(b) Molal solution

(c) Biuret reagent

(d) ppm

3. Write briefly on (any *three*) of the following :

(a) Lux meter

(b) Culture media

(c) Camera Lucida

(d) The necessary equipments for specimen collection

(e) Laminar air flow.

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4. Compare the principles, methods of operation and utilities of electron microscope and fluorescence microscope. What are the advantages of digital camera ?  $7+3=10$

Or

Describe in brief the principles and application of hot air oven, autoclave and incubator. 10

5. What is Beer law ? Mention the relationship between Beer and Lambert's law. Describe the working principles and application of spectrophotometer.  $2+3+5=10$

Or

Write the method of preparation of 1N solution of HCl. Describe the uses of various indicators.  $3+7=10$

6. Describe the techniques used for the preparation of herbarium specimen of aquatic and xerophytic plants. How those techniques are different from normal procedures ?  $3\frac{1}{2}+3\frac{1}{2}+3=10$

Or

Write short notes on the following :  $5 \times 2 = 10$

(a) Chromatography

(b) Mounting media.

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