22BOP314N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2025
(Third Semester)

Branch - **BOTANY**

TRENDS IN PLANT RESEARCH

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Laminar air flow burner used in Flame photometer is also known as a) Turbulent burner b) Premix burner c) Total consumption burner d) Nozzle mix burner	K1	CO1
	2	The centrifuge can be used for the separation of proteins and nucleic acids a) Normal centrifuge b) Laboratory centrifuge c) Ultracentrifuge d) Preparative centrifuge	K2	CO1
2	3	The gas that cannot be used as a mobile phase in Gas chromatography a) Oxygen b) Helium c) Nitrogen d) Hydrogen	K1	CO2
	4	The device is used to convert light energy into electrical signal a) Amplifier b) Detector c) Sample cell d) Slit	K2	CO2
3	5	The point where the null hypothesis gets rejected is called as a) Significant value b) Rejection value c) Acceptance value d) Critical value	K1	CO3
	6	The regression analysis is concerned with prediction of a) Dependent variable b) Independent variable c) Intervening variable d) Constant value	K2	CO3
4	7	When a company develops new technology to improve its product, what kind of intellectual property is used to prevent copying the invention? a) Patent b) Copyright c) Trademark d) Trade secret	K2	CO4
	8	What is the name of the procedure performed under sterile conditions to eliminate contamination in hopes to obtain a pure culture of one type of microorganism? a) sterilization technique b) disinfectant technique c) aseptic technique d) pathogen technique	K1	CO4
5	9	After completion of work, on research problem, the report discussed in a scholar's meet, and researcher was suggested to change title of problem and hypothesis, based on the data analysis. This is: a) Processes systemization of report b) Illogical and not desirable c) Logical and appropriate d) Improving the validity of report	K1	CO5
	10	Identify the citation style is famously used in science and medicinal research? a) The Vancouver Referencing Style b) APA style c) MLA style d) Chicago Manual style	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Examine the working mechanism of fluorescence microscope.	K4	CO1
		(OR)		
	11.b.	Inspect the principle and operating procedure of pH meter.		
2	12.a.	Expound the principle involved in Column chromatography.	K5	CO2
		(OR)		
	12.b.	Determine the working mechanism of LC-MS.		
3	13.a.	Analyze various methods of sampling and briefly comment on each method.	K4	CO3
		(OR)		
	13.b.	Compute the standard deviation for the following data. Weight of fish (g): 8, 6, 7, 5, 6, 10, 8, 6, 7, 7		
4	14.a.	Explain the provisions of TRIPS agreement on patents.	K5	CO4
		(OR)		
	14.b.	Recommend good laboratory practices to do research.		
5	15.a.	Discuss the main issues which should receive the attention of researchers in formulating the research problem with suitable examples.	K6	CO5
		(OR)		
	15.b.	State and explain the functions of review literature in research.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Decipher the principle involved in centrifuge techniques and list out their applications.	K5	CO1
2	17	Recommend some spectroscopic methods for the identification and characterization of phytochemicals.	K5	CO2
3	18	Examine the following data relate to the pod length and the number of seeds per pod. Calculate the correlation coefficient and test their level of significance (table value is 3.36 at 1% significant level). Pods length (cms): 4.5, 4.0, 5.2, 4.6, 5.2, 5.2, 4.3, 4.0, 4.5, 5.5 No. of seeds/pod: 5, 5, 6, 6, 6, 7, 4, 4, 5, 6	K4	CO3
4	19	Inspect the intellectual property rights and list out the what rights are available to protect it?	K4	CO4
5	20	Narrate the various components of thesis writing.	K6	CO5

Z-Z-Z END