	Harcourt Butler Technical University Kanpur		MID SEMESTER EXAM
Branch	PLASTIC TECHNOLOGY	Program	B. Tech.
Course Name	INTRODUCTION TO POLYMER SCIENCE	Semester	7th
Course Code	OPL 491	Year	Final(CH/ME/ET/EE/ IT/CS/BE/PT/LT/FT)
Time: 1:00 Hr.	Answer All Questions	Maximum Marks	15

Knowledge Level (KL)			
	K1: Remembering	K3: Applying	K5: Evaluating
	K2: Understanding	K4: Analysing	K6: Creating

Note: 1.Attempt all questions.
2. All questions carry marks, as shown against them.

Q. No	Questions	Marks	COs	KL
1	Discuss the kinetics of free radical polymerization and describe expression for rate of polymerization.	5	CO2	K2
2	Name various techniques used for polymerization of monomers and describe any one technique in detail.	5	CO2	K2
3	Analyze the high pressure production process for manufacturing of LDPE with the help of a neat flow sheet.	5	CO3	K4

Course outcome: On the successful completion of the course, students will be able to

CO 1	Understand basics of polymer science and their classifications.	Understand
CO 2	Understand different types of polymerizations with mechanism and kinetics.	Understand
CO 3	Understand and apply various production processes of commodity plastics	Apply
CO 4	Understand chemistry and apply production of common formaldehyde based thermoset.	Apply
CO 5	Understand and apply different plastic processing techniques, Indian markets of Plastics.	Apply

	Harcourt Butler Technical University Kanpur			Ist MID SEM
Branch	CSE/IT		Program	B. Tech
Course Name	Software Testing		Semester	VII
Course Code	ECS 491		Year	IV
Time:	1:00 Hr		Maximum Marks	15
Knowledge Level (KL)	K1: Remembering	K3: Applying	K5: Evaluating	
	K2: Understanding	K4: Analyzing	K6: Creating	

Note: Answer All Questions

Q. No	Questions	Marks	COs	KL
1	Define the following terms: a. Defects b. Software Quality c. Test Suites d. Software Defect Tracking e. Verification and validation	5	CO1	K1

2	Explain white-box testing with its type.
	`/* sort takes an integer array and sorts it in ascending order */`
	`void sort (int a [ ], int n)`
	`{`
	`int i,j;`
	`for( i = 0; i < n − 1; i++)`
	`for(j = i + 1; j < n; j++)`
	`if(a[i] > a[j])`
	`{`
	`temp = a[i];`
	`a[i] = a[j];`
	`a[j] = temp;`
	`}`
	`}`
	Determine the cyclomatic complexity of the sort function.
	Design a test suite for the function sort that satisfies the white-box testing strategies.
		5	CO3	K3

3	Distinguish between the static and dynamic analysis of a program. Design black-box test suite for a program that accepts a pair of points defining a straight line and another point and a float number defining the center of a circle and its radius. The program is intended to compute their points of intersection and prints them.	5	CO3	K5

Course Outcomes		
	CO1	Understand the various types and principles of Software Testing (Understand)
	CO2	Understand white box and black box testing. (Understand)
	CO3	Apply Integration, System, and Acceptance Testing. (Apply)
	CO4	Design Test selection & minimization for regression testing. (Apply)
	CO5	Analyze Test Management and Automation. (Apply)

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MID SEM

Branch	CSE/IT	Program	B. Tech
Course Name	Mobile Application Development	Semester	VII
Course Code	ECS-451	Year	Final
Time: 1:00 Hr	Answer All Questions	Maximum Marks	15
Knowledge Level (KL)	K1: Remembering, K2: Understanding, K3: Applying, K4: Analyzing, K5: Evaluating, K6: Creating		

Note: .....

Q. No	Questions	Marks	COs	KL
1	What is Mobile Computing?	3	CO1	K1
2	Write the characteristics of mobile app.	3	CO1	K2
3	What is Android? Write the different versions of Android.	3	CO1	K1
4	What is user Interface in mobile application?	3	CO3	K4
5	Explain the following: a. Native application b. Hybrid application	3	CO1	K2

Course Outcomes	CO1	Introduction to mobile computing, Characteristics of mobile applications, History of mobile application frameworks, Android Development Environment, Factors in Developing Mobile Applications, Mobile Software Engineering, Frameworks and Tools, Generic UI Development, VUIs and Mobile Apps, Text-to-Speech Techniques, Designing the Right UI, Multichannel and Multi modal UIs
	CO2	Overview of mobile application development languages: Java and Android Studio.
	CO3	Application models of mobile application frameworks, User-interface design for mobile applications, Managing application data, Integrating with cloud services, Integrating networking, OS and hardware into mobile-applications
	CO4	Addressing enterprise requirements in mobile applications – performance, scalability, modifiability, availability and security, Security and Hacking, Active Transactions, Hacking Android
	CO5	Testing methodologies for mobile applications, Publishing, deployment, maintenance and management, Platforms and Additional Issues, Development Process, Architecture, Design, Technology Selection, Mobile App Development Hurdles

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	Harcourt Butler Technical University Kanpur			MID SEM
Branch	Computer Science & Engineering		Program	B.Tech
Course Name	Artificial Intelligence		Semester	VII
Course Code	ECS 453		Year	2023
Time: 1.00Hr	Answer All Questions		Maximum Marks	15
Knowledge Level(KL)	K1:Remembering	K3:Applying	K5:Evaluating	
	K2:Understanding	K4:Analysing	K6:Creating	

Note: Attempt all questions.

Q.No	Questions	Marks	COs	KL
1	Explain with example, how Artificial Intelligence based Computing differs from Conventional Computing?	3	CO1	K2 K4
2	Discuss the algorithms used in Game playing using AI.	3	CO2	K3
3	Provide a good heuristic function for 8- Puzzle problem. Discuss the performance improvement of the resultant heuristic algorithm over blind search.	3	CO2	K3
4	Discuss the problems associated with Hill Climbing Search Algorithm. What is simulated annealing?	3	CO2	K3
5	What is Control Strategy in AI? What are its two desirable features? Give some Control Strategies used in AI based Production Systems.	3	CO1 CO2	K2 K4

********** End of Question Paper **********

Course Outcomes	**CO1**	Understand different types of AI agents (Understand).
	CO2	Understand and apply various AI search algorithms (uninformed, informed, heuristic, constraint satisfaction, genetic algorithms) (Understand, Apply).
	CO3	Understand the fundamentals of knowledge representation, reasoning, and machine learning techniques and apply them to real world problems. (Understand, Apply)
	CO4	Know how to build simple knowledge based systems using languages like LISP, Prolog, and AI tools like JESS. (Apply)
	CO5	Carry out independent (or in a small group) research and communicate it effectively in a seminar. (Apply, Analyze)

	Harcourt Butler Technical University Kanpur			I MID SEM
Branch	FOOD TECHNOLOGY (Open Electives)		Program	B.Tech
Course Name	BASIC CONCEPT OF FOOD PROCESSING AND PRESERVATION		Semester	VII
Course Code	OFT 491		Year	2023-24
Time: 1.00 Hr	Answer All Questions		Maximum Marks	15
Knowledge Level (KL)	K1:Remembering	K3:Applying	K5:Evaluating	
	K2:Understanding	K4:Analysing	K6:Creating	

Note: Attempt all questions. All questions carry marks as shown.

Q. No	Questions	Marks	COs	KL
1	State the principle of food preservation? Write down the various methods used for preservation of food.	4	1	2
2	Explain physical, chemical and biological causes of food spoilage with suitable examples.	4	1	2
3	Enlist the main nutrients of the food. Classify the food on the basis of function.	3	2	2
4	Explain different factors that affect the food nutrients during food processing with suitable examples.	4	2	3

Course Outcomes	CO1	Understand fundamental principles of food preservation	K
	CO2	Understand the Basic concept of nutrients of food	K
	CO3	Understand the principle of thermal processing and applying high temperature processing in food industry	K
	CO4	Understand the principles of non-thermal preservation methods	K
	CO5	Understand concepts of Food quality and role of total quality management system in food industry	K