Chhattisgarh Swami Vivekanand Technical University

University Teaching Department

Class Test-1 (*July-December 2024*)

B.Tech (H)-7th Semester

Branch: Artificial Intelligence

Subject Name: Intelligent System and Robotics **Subject Code: D127771(022)**

Max Marks: 40 **Min Marks:14** **Times: 2 hrs**

Note: All questions are compulsory

CO 1: Understand the fundamental concept of intelligent system and robotics, including perception, cognition and Action. ⇒ Principle

CO 2: Analyze the component and Architecture of intelligent robotics system, including system actuators and Control system.

Q.No.		Questions	Marks	BL	CO
		UNIT 1			
1	a	Write the Challenges of intelligent System and Robotics.	4	L1	1
	b	Discuss the History of Intelligent System and Robotics.	8	L2	1
	c	Demonstrate the principals of Robotics with suitable example.	8	L3	1
		UNIT 2			
2	a	Define Sensor fusion Techniques.	4	L1	2
	b	Explain the idea of Mapping and localization for Robot Navigation.	8	L2	2
	c	Illustrate the Sensory modalities in robotics	8	L4	2

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B.Tech(H)-7th Semester Branch: Artificial Intelligence

Subject Name: Business Intelligence and Analytics
Max Marks: 40 **Min Marks:14**
Times: 2 hrs

Note: All questions are compulsory

CO1. Gain a comprehensive understanding of principles, techniques, and technologies for analysing and extracting insights from business data.
CO2. Acquire knowledge and skills in applying artificial intelligence (AI) and data analytics techniques to address real-world business challenges.
CO3.Develop the ability to optimize decision-making processes through data-driven insights.

Q.No.		Questions	Marks	BL	CO
		UNIT 1			
1	a	What is Business Intelligence (BI), and how does it differ from BusinessAnalytics?	2	L1	1
	b	What is the role of data-driven decision-making in modern organizations, and how does it improve business outcomes?	6	L2	1
	c	What are some ethical concerns related to the use of data analytics in businesses, and how can organizations address them?	6	L2	1
		UNIT 2			
2	a	Differentiate Between EDA and CDA.	2	L2	2
	b	Explain any two techniques for outlier detection in sales data.	6	L3	2
	c	List Down Best practices for designing effective data visualizations.	6	L4	2
		UNIT 3			
3	a	Discuss the role of feature engineering in predictive analytics. What are some common feature selection techniques, and how do they improvemodel performance?	6	L5	3
	b	Explain the difference between regression, classification, and clustering in predictive modeling. Provide examples of real-life applications for each.	6	L4	3

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University Teaching Department
Class Test-1 (*July-December 2024*)
B.Tech(H)-7th Semester
Branch: Artificial Intelligence

Subject Name: Software Engineering **Subject Code: D127773(022)**
Max Marks: 40 **Min Marks:14** **Times: 2 hrs**
Note: Question (a) is compulsory, attempt any two questions from (b), (c), and (d).

CO 1: *The learner acquires basic concepts regarding Software engineering principles, SDLC & Requirements engineering.*
CO 2: *The learner understands the principles of Software design & AI systems, Architectural styles.*

Q.No.		Questions	Marks	BL	CO
		UNIT 1			
1	a	Define Requirement engineering. What are the techniques used in Requirement engineering?	4	L1	1
	b	Explain the principles and practices of Agile model.	8	L2	1
	c	What are the Ethics and Professional practices in Software engineering? Explain the key roles in Scrum framework for Software development.	8	L2	1
	d	Explain each phase of Software Development Life Cycle (SDLC).	8	L2	1
		UNIT 2			
2	a	What are the characteristics of Client component and Server component in Client-Server architecture?	4	L1	2
	b	Explain the following: a) Modifiability c) Adaptability b) Cohesion d) Content coupling	8	L2	2
	c	What are the different attributes used in ER-diagram? Give one example of unary and 4-ary relationship in ER-diagram. Explain Class diagram with example.	8	L3	2
	d	Explain UML modeling technique? Draw DFD diagram having Level 0 DFD, Level 1 DFD and Level 2 DFD.	8	L3	2

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY

Department of Computer Science & Engineering

Class Test – I Session- July – Dec, 2024 Month- September

Sem- CSE 7th (Artificial Intelligence)

Subject- Image Processing (Professional Elective II) Code-

Time Allowed: 2 Hours Max Marks: 40

Note: - All the question are compulsory.

	Questions	Marks	Levels of Bloom's Taxonomy	COs
	Part A			
Q1 (a)	How does picture formation in the eye vary from image formation in a camera? a) Fixed focal length b) Varying distance between lens and imaging plane c) No difference d) Variable focal length	[2]	Understand, Apply	CO1
(b)	Which of the following tool is used in tasks such as zooming, shrinking, rotating, etc.? a) Filters b) Sampling c) Interpolation d) None of the Mentioned	[2]	Understand, Apply	CO1
Q3	Discuss common image preprocessing techniques and their applications.	[4]	Apply	CO2
Q4	Discuss the fundamental components of digital image processing? How do these stages contribute to the overall image processing pipeline.	[6]	Apply	CO1
Q5	Explain how digital images are represented in terms of pixel values, resolution, bit depth, and color models? How do these characteristics affect image quality and processing.	[6]	Apply	CO2
	Part B			
Q1 (a)	Which of the following is the primary objective of sharpening of an image? a) Decrease the brightness of the image b) Increase the brightness of the image c) Highlight fine details in the image d) Blurring the image	[2]	Understand	CO2
(b)	Which of the following is the application of Histogram Equalisation? a) Blurring b) Contrast adjustment c) Image enhancement d) None of the Mentioned	[2]	Understand	CO2
Q2	Compare spatial domain and frequency domain image enhancement techniques.	[4]	Apply	CO3
Q 3	What is noise in image? Explain noise model in image processing, mention different types of noise.	[6]	Apply	CO2
Q4	Explain the concept of histogram equalization. Discuss its advantages and limitations when applied to images with varying intensity distributions.	[6]	Apply	CO3