Hall Ticket Number :										

R-20

Code: 20A5M05

III B.Tech. II Semester Minors Regular Examinations May/June 2024

Computer Organization

(Common to CE, EEE, ME and ECE)

Max. Marks: 70 Time: 3 Hours

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Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. In Part-A, each question carries **Two marks.**
3. Answer **ALL** the questions in **Part-A** and **Part-B**

PART-A

(Compulsory question)

			CO	BL
1.	Answer ***all*** the following short answer questions	(5 X 2 = 10M)		
	a)	Differentiate between combinational and sequential circuits.	1	L2
	b)	What is register transfer language?	2	L1
	c)	What are the functions of control memory?	3	L1
	d)	What is cache memory?	4	L1
	e)	What is the need of I/O interface module	5	L1

PART-B

Answer *five* questions by choosing one question from each unit (5 x 12 = 60 Marks)

			Marks	CO	BL
		UNIT–I			
2.	a)	Explain the floating point representation with an example.	6M	1	L2
	b)	Explain about the error detection codes.	6M	1	L2
		OR			
3.	a)	Perform and explain arithmetic addition, subtraction, and overflow detection using fixed point representation.	6M	1	L2
	b)	Describe the different types of computers.	6M	1	L2
		UNIT–II			
4.	a)	Discuss about the arithmetic logic shift unit with examples.	6M	2	L3
	b)	Describe the memory reference instructions with an example.	6M	2	L2
		OR			
5.	a)	Explain about the arithmetic micro operations.	6M	2	L2
	b)	Explain about the RISC architecture.	6M	2	L2
		UNIT–III			
6.		Explain in detail about micro programed Address sequencing with block diagram	12M	3	L2
		OR			

7.	a)	Compare the hard wired control unit and micro programmed control unit	6M	3	L3
	b)	Explain the operation of a Micro programmed control unit using a diagram	6M	3	L2

UNIT–IV

8.		Explain how multiplication is done for floating point numbers with flow chart.	12M	4	L2

OR

9.		With a neat block diagram explain the virtual memory address translation	12M	4	L2

UNIT–V

10.	a)	Discuss about Input-Output Interface	6M	5	L2
	b)	What is priority interrupt? Discuss about daisy chaining priority interrupt.	6M	5	L2

OR

11.	a)	Explain about DMA	6M	5	L2
	b)	Explain the five stage Instruction pipeline with timing diagram.	6M	5	L2

*** End ***

Hall Ticket Number :										

R-20

Code: 20A4H10

III B.Tech. II Semester Regular (Honors) Examinations May/June 2024

DSP Processors and Architectures

(Electronics and Communication Engineering)

Max. Marks: 70 Time: 3 Hours

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Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. In Part-A, each question carries **Two marks.**
3. Answer **ALL** the questions in **Part-A** and **Part-B**

PART-A

(Compulsory question)

1.	Answer ***all*** the following short answer questions (5 X 2 = 10M)		CO	BL
a)	Discuss the computational complexity of DFT.		CO1	L3
b)	List various sources of error in DSP implementations.		CO2	L1
c)	It is required to find the sum of 64 numbers each represented by 16 bits. How many bits should be the accumulator have so that the sum can be computed without the occurrence of overflow error or loss of accuracy?		CO3	L3
d)	Describe the operation of MAC instruction: MAC *AR5 +,#1234h,A.		CO4	L2
e)	What minimum size FFT must be used to compute DFT of 40 points? What must be done to the samples before chosen FFT applied?		CO5	L3

PART-B

Answer *five* questions by choosing one question from each unit (5 x 12 = 60 Marks)

			Marks	CO	BL
		UNIT–I			
2.	a)	Draw the block diagram of DSP systems and write advantages & disadvantages?	6M	CO1	L1
	b)	The signal x(n) = {0, 2, 4 ,6 , 8 } is interpolated using the interpolation filter sequence b_k = { 0.5 ,1, 0.5 } and the interpolation factor is 2. Determine the interpolated sequence y(m).	6M	CO1	L3
		OR			
3.	a)	What are the sources of errors? Discuss about the A/D and D/A conversion errors.	6M	CO1	L1
	b)	Compare the dynamic range and percentage resolution of a signal that uses: (i) 16-point fixed point format. (ii) 32-point floating point format with 14 bit for the mantissa and 8- bit for the exponent.	6M	CO1	L2
		UNIT–II			
4.	a)	With a neat block diagram explain about Address Generation Units.	6M	CO2	L1
	b)	Write about Data addressing capabilities and explain special addressing modes.	6M	CO2	L1
		OR			

5.	a)	Explain the operation of a MAC unit using relevant block diagram.	6M	CO2	L2
	b)	Identify the addressing modes of operands in each of the following instructions (AR stand for address register): *(i) ADD #1234h* *(ii) ADD 1234h* *(iii) ADD*AR+* (iv) *ADD offsetaddr[-], *AR*	6M	CO2	L1

UNIT–III

6.	a)	Explain circular addressing mode and bit reversed addressing mode of a typical TMS320C54XX processor.	6M	CO3	L2
	b)	Explain the difference between the internal external modes of clocking TMS320C54XX processors. How do you vary the clock frequency in each case?	6M	CO3	L2

OR

7.	a)	Discuss about the different On-chip Peripherals used in TMS320C54XX with neat diagram.	6M	CO3	L2

	b)	Show the pipeline operation of the following sequence of instructions if the initial value of AR3 is 80 and the values stored in memory location 80,81,82 are 1,2,and 3.
		LD *AR3+,A
		ADD #1000H,A
		STL A, *AR3+
		.
		:
			6M	CO3	L3

UNIT–IV

8.	a)	What is Q-notation? Determine the value of each of the following 16-bit numbers represented using the given Q-notation: 4400h as Q0 number, Q15 number and Q7 number.	6M	CO4	L3
	b)	With necessary equations explain the implementation of Butterfly in DIT FFT algorithm.	6M	CO4	L2

OR

9.	a)	Explain the operation of an interpolation filter using relevant expressions and diagrams.	6M	CO4	L2
	b)	With neat block diagram explain the adaptive filters operation. How the filter coefficients updating in the adaptive filter implementation?	6M	CO4	L2

UNIT–V

10.	a)	Explain about data transmission formats for the PCM3002 CODEC.	6M	CO5	L2
	b)	Discuss the programming of Multichannel Buffered Serial ports with an example.	6M	CO5	L2

OR

11.	a)	Explain the interfacing of flash memory with 54XX DSP.	6M	CO5	L2
	b)	How does DMA help in increasing the processing speed of a DSP process? Explain with diagram.	6M	CO5	L2

*** End ***

Hall Ticket Number :										

R-20

Code: 20A463T

III B.Tech. II Semester Regular & Supplementary Examinations May/June 2024

Digital Signal Processing

(Electronics and Communication Engineering)

Max. Marks: 70 Time: 3 Hours

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Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. In Part-A, each question carries **Two marks.**
3. Answer **ALL** the questions in **Part-A** and **Part-B**

PART-A

(Compulsory question)

		CO	BL
1.	Answer ***all*** the following short answer questions (5 X 2 = 10M)		
a)	List any four properties of the DFT.	CO1	BL1
b)	Calculate the number of complex multiplications and complex additions required for 1,024 point sequence using FFT algorithm.	CO3	BL3
c)	What is transposition theorem and transposed structure?	CO2	BL2
d)	Where is multi-rate digital signal processing required?	CO2	BL2
e)	What are the methods used for pitch detection in musical signals?	CO2	BL2

PART-B

Answer *five* questions by choosing one question from each unit (5 x 12 = 60 Marks)

		Marks	CO	BL
	UNIT–I			
2. a)	Investigate the causality and stability of the following systems. i) $h(n)=(2)^n u(n-1)$ ***ii)*** $h(n)=(0.5)^{\lvert n\rvert}$	6M	CO5	BL5
b)	Find the impulse response of the system described by the difference equation. $y(n)-3y(n-1)-4y(n-2)=x(n)+2x(n-1)$.	6M	CO3	BL3
	OR			
3. a)	Find the linear convolution of the sequence x(n) and h(n) using DFT. $x(n)=\{1,0,2\}, h(n)=\{1,1\}$	6M	CO3	BL3
b)	Find the IDFT of $x(n)=\{2.5,1-j2,-0.5,1+j0.5\}$.	6M	CO3	BL3
	UNIT–II			
4. a)	Find the 8-point DFT of the real sequence $x(n)=\{1,2,2,2,1,0,0,0\}$ using DIT –FFT algorithm.	8M	CO3	BL3
b)	Find the IDFT of the sequence $X(k)=\{10,-2+2j,-2,-2-2j\}$ using DIT algorithm.	4M	CO3	BL3
	OR			
5. a)	Find the 8-point DFT of the real sequence $x(n)=\{1,1,1,1,0,0,0,0\}$ using DIF –FFT algorithm	8M	CO3	BL3
b)	Compute the DFT of the sequence $x(n)=\{0,1,2,3\}$ using DIT FFT.	4M	CO2	BL2

UNIT–III

6. a) Apply the bilinear transformation to $H_a(s)=\frac{4}{(s+3)(s+4)}$ with T=0.5sec, and find H(z). 6M CO3 BL3

b) Obtain the direct form-I, direct form-II realization of the LTI systems governed by the equation .

$$y(n)=-\frac{3}{8}y(n-1)+\frac{3}{32}y(n-2)+\frac{1}{64}y(n-3)+x(n)+3x(n-1)+2x(n-2)$$

6M CO3 BL3

OR

7. a) Given $H_a(s)=\frac{16(s+2)}{(s^2+2s+5)(s+3)}$.

Find H(z) using impulse invariant transformation. Assume T=0.2 sec. 6M CO3 BL3

b) Using rectangular window technique design a lowpass filter with pass band gain of unity, cutoff frequency of 1000Hz and working at sampling frequency of 5 kHz. The length of the impulse response should be 7. 6M CO3 BL3

UNIT–IV

8. a) Show that the up sampler and down sampler are time-variant systems. 6M CO3 BL3

b) For the multi-rate system shown in Figure, develop an expression for the output y(n) as a function of the input x(n).

6M CO3 BL3

OR

9. a) Discuss the Filter Design and Implementation for Sampling rate conversion. 6M CO3 BL3

b) Explain the concept of Sampling rate conversion by a rational factor I/D. 6M CO3 BL3

UNIT–V

10. a) Summarize the key points regarding spectral analysis of non-stationary signals. 6M CO4 BL2

b) Discuss the applications where oversampling converters are particularly beneficial, such as audio processing, telecommunications, and instrumentation. 6M CO4 BL2

OR

11. a) Illustrate how can Fourier analysis be used to decompose musical signals into their frequency components? 6M CO4 BL3

b) Explain the role of digital filters, such as decimation filters and interpolation filters, in oversampling converters to reduce noise and improve performance. 6M CO4 BL2

*** End ***

Hall Ticket Number :										

R-20

Code: 20A461T

III B.Tech. II Semester Regular & Supplementary Examinations May / June 2024

Embedded Systems

(Electronics and Communication Engineering)

Max. Marks: 70 Time: 3 Hours

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Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. In Part-A, each question carries **Two marks.**
3. Answer **ALL** the questions in **Part-A** and **Part-B**

PART-A
(Compulsory question)

			CO	BL
1.	Answer ***all*** the following short answer questions	(5 X 2 = 10M)		
	a)	List out the On-Chip Peripherals of 8051.	CO5	L2
	b)	What is the disadvantage in 7-segment LED interfacing using ports?	CO1	L2
	c)	Mention the difference between CISC and RISC.	CO3	L1
	d)	Write the IEEE 1394 protocol architecture.	CO4	L2
	e)	What is the purpose of round-robin algorithm?	CO1	L2

PART-B
Answer *five* questions by choosing one question from each unit (5 x 12 = 60 Marks)

			Marks	CO	BL
		UNIT–I			
2.	a)	Draw the 8051 Microcontroller architecture and explain its operation in detail.	6M	CO1	L2
	b)	Explain the timer and counter operations of 8051 Microcontroller.	6M	CO1	L2
		OR			
3.		Draw and explain the internal architecture of 8051 microcontroller. Also list different applications of 8051.	12M	CO1	L2
		UNIT–II			
4.		With neat sketch, explain seven segment LED interfacing using ports?	12M	CO2	L5
		OR			
5.		Write an assembly language program for 8051 microcontroller to display a message “EMBEDDED SYSTEMS” on LCD. Draw the neat interface diagram?	12M	CO2	L2
		UNIT–III			
6.	a)	What are the various categories of embedded systems? Give Example of each category.	6M	CO3	L5
	b)	Illustrate the recent trends in embedded system.	6M	CO3	L2
		OR			
7.	a)	Explain the software architecture of an embedded system.	6M	CO3	L2
	b)	Describe the process of Development and testing tools for an embedded software.	6M	CO3	L4
		UNIT–IV			
8.	a)	Explain the working of UART communication interface. Mention the advantages and disadvantages of UART.	6M	CO4	L2
	b)	Describe the IEEE 802.11 family of wireless LAN	6M	CO4	L2
		OR			
9.	a)	Explain the Ethernet LAN Protocol architecture.	6M	CO4	L5
	b)	Write about I2C and CAN Bus.	6M	CO4	L2
		UNIT–V			
10.	a)	Explain how a semaphore can be used for inter-task synchronization.	6M	CO5	L2
	b)	Explain the various type of interrupt service routines with example.	6M	CO5	L4
		OR			
11.	a)	Write about Real Time Operating Systems	6M	CO5	L2
	b)	Illustrate about Embedded Operating Systems	6M	CO5	L2

*** End ***

Hall Ticket Number :										

R-20

Code: 20A462T

III B.Tech. II Semester Regular & Supplementary Examinations May/June 2024

Microwave Engineering

(Electronics and Communication Engineering)

Max. Marks: 70 Time: 3 Hours

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Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. In Part-A, each question carries **Two marks.**
3. Answer **ALL** the questions in **Part-A** and **Part-B**

PART-A

(Compulsory question)

		CO	BL
1.	Answer ***all*** the following short answer questions (5 X 2 = 10M)		
a)	Write the expression for cut-off frequency for dominant mode in rectangular waveguide.	CO1	L1
b)	Write the expression for quality factor of a cavity resonator.	CO1	L1
c)	List any two applications of a Magic Tee.	CO2	L2
d)	Give examples of crossed field microwave tubes.	CO2	L1
e)	Mention different components in the microwave bench setup.	CO3	L1

PART-B

Answer *five* questions by choosing one question from each unit (5 x 12 = 60 Marks)

		Marks	CO	BL
	UNIT–I			
2. a)	Derive the expressions for the fields in rectangular waveguide in case of Transverse Magnetic (TM) wave.	6M	CO1	L2
b)	Determine the cutoff wavelength and wave impedance in case of rectangular waveguide with dimensions of 5 x 2 cm propagating TM_{11} mode at f = 9GHz.	6M	CO1	L2
	OR			
3. a)	Starting from Maxwell equations derive the field expressions for TE waves in rectangular waveguide.	8M	CO1	L3
b)	Sketch the field patterns for TE and TM dominant modes in a rectangular waveguide.	4M	CO1	L2
	UNIT–II			
4. a)	Derive the frequency of rectangular cavity resonator.	6M	CO1	L2
b)	For the dominant mode of operation in an air-filled circular waveguide of inner diameter 4 cm. Find: (i) Cut off wavelength. (ii) Guided wave length. (iii) Cut off frequency	6M	CO1	L2
	OR			

5.		Derive the filed components of TM wave for a circular wave guide.	12M	CO1	L3

UNIT–III

6.	a)	Derive S-Matrix for H - Plane Tee junction.	6M	CO2	L2
	b)	A 100 W power source is connected to the input of a directional coupler with coupling factor = 20 dB, Directivity=60 dB and an insertion loss of 0.8 dB. Find output power at the through, coupled and isolated ports. Assume all ports to be matched	6M	CO2	L4

OR

7.	a)	Derive S-Matrix for magic Tee junction.	6M	CO2	L4
	b)	An isolator has an insertion loss of 0.5 dB and an isolation of 30dB. Determine the scattering matrix of the isolator if the isolated ports are perfectly matched to the junction.	6M	CO2	L3

UNIT–IV

8.		Using velocity and current modulation, explain the operation of a two-cavity Klystron Amplifier.	12M	CO2	L2

OR

9.	a)	Discuss about classification of microwave tubes.	3M	CO2	L1
	b)	Explain the process of bunching in a cavity magnetron.	9M	CO2	L2

UNIT–V

10.	a)	Describe in detail about Gunn Oscillation Modes.	8M	CO2	L2
	b)	Determine the cu abdc t Gunn Oscill -type GaAs Gunn diode if electron density conductivity of n $n = 10^{-}$ cm^{-3}, electron density at lower valley $n_l = 10^{10}\ cm^{-3}$, electron density at upper valley $n_u = 10^{8}\ cm^{-3}$ mobility in lower valley $\mu_l = 8000\ cm^2/V-s$, mobility in upper valley $\mu_u = 180\ cm^2/V-s$ at temperature $T = 300\ K$.	4M	CO2	L3

OR

11.	a)	Draw the bench setup for measuring low VSWR and explain its operation.	8M	CO3	L3
	b)	Determine the attenua for measu the given attenuat power meter reads 10 ation for mW with attenuator and 26 tor, if the mW after removing it.	4M	CO3	L2

*** End ***

Hall Ticket Number :										

R-20

Code: 20A46CT

III B.Tech. II Semester Regular & Supplementary Examinations May / June 2024

Radar Engineering

(Electronics and Communication Engineering)

Max. Marks: 70 Time: 3 Hours

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Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. In Part-A, each question carries **Two marks.**
3. Answer **ALL** the questions in **Part-A** and **Part-B**

PART-A

(Compulsory question)

			CO	BL
1.	Answer ***all*** the following short answer questions	(5 X 2 = 10M)		
	a) Define integration of Radar pulses		CO1	L1
	b) What is the need of frequency modulation in Radars		CO2	L2
	c) List the limitations of MTI radar		CO3	L2
	d) What is the need of Tracking with Radar		CO4	L2
	e) Define noise temperature		CO5	L1

PART-B

Answer *five* questions by choosing one question from each unit (5 x 12 = 60 Marks)

			Marks	CO	BL
		UNIT–I			
2.	a)	Interpret the Radar range equation with Integration of Radar pulses.	6M	CO1	L2
	b)	Find the range of Radar whose transmitted power is 160KW, cross sectional area of the target is 25 sq. m. The minimum power received is 1mw. The power gain of the antenna used is 900 at the operating frequency of 2GHz.	6M	CO1	L1
		OR			
3.	a)	Illustrate cross sectional area of the target influences on received signal of Radar system.	6M	CO1	L2
	b)	Develop the basic block diagram of Radar system and Outline its operation.	6M	CO1	L3
		UNIT–II			
4.	a)	Interpret the operation of CW radar with non-zero IF in the receiver with block diagram.	6M	CO2	L4
	b)	What is the need of isolation between Transmitter and Receiver in CW Radar	6M	CO2	L2

OR

5.	a)	Identify the process for FM-CW Radar-Range and Doppler measurements	8M	CO2	L2
	b)	List the applications of CW radar.	4M	CO2	L1

UNIT–III

6.	a)	Find the 3 lowest blind speeds of MTI radar operates at 4GHz with PRF of l000 PPs.	6M	CO3	L3
	b)	Define Blind Speed and what is the use of delay line chancellor.	6M	CO3	L1

OR

7.	a)	Justify, does the Doppler effect occurs in moving target or not.	4M	CO3	L2
	b)	Construct the MTI Radar with Power amplifier transmitter.	8M	CO3	L3

UNIT–IV

8.	a)	List the types of tracking Radar systems.	4M	CO4	L1
	b)	Enumerate the amplitude comparison monopulse with simple block diagram.	8M	CO4	L2

OR

9.	a)	Compare Monopulse tracker and Conical scan tracker.	6M	CO4	L4
	b)	Explain the basic principle of continuous angle tracking.	6M	CO4	L2

UNIT–V

10.	a)	Distinguish between the matched and non-matched filters.	6M	CO5	L4
	b)	Write note on Radar Displays.	6M	CO5	L3

OR

11.		Explain the principle and characteristics of a matched filter and derive the expression for its frequency response function.	12M	CO5	L2

*** End ***

Hall Ticket Number :										

R-20

Code: 20A4H05

III B.Tech. II Semester Regular (Honors) Examinations May/June 2024

Internet of Things

(Electronics and Communication Engineering)

Max. Marks: 70 Time: 3 Hours

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Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. In Part-A, each question carries **Two marks.**
3. Answer **ALL** the questions in **Part-A** and **Part-B**

PART-A

(Compulsory question)

			CO	BL
1.	Answer ***all*** the following short answer questions	(5 X 2 = 10M)		
	a)	Define IOT?	CO1	L1
	b)	What is the role of SDN in IOT?	CO2	L1
	c)	List the various fields in 6loWPAN format?	CO3	L1
	d)	Outline the python data types?	CO4	L2
	e)	What is an IOT device?	CO5	L1

PART-B

Answer *five* questions by choosing one question from each unit (5 x 12 = 60 Marks)

			Marks	CO	BL
		UNIT–I			
2.		Compare physical design with logical design for IOT?	12M	CO1	L2
		OR			
3.		List and explain any two IOT enabling technologies?	12M	CO1	L2
		UNIT–II			
4.	a)	Compare IOT with M2M Communication	6M	CO2	L2
	b)	Outline the role of NFV in IOT?	6M	CO2	L2
		OR			
5.		Summarize the various steps involved in the IOT platform design methodology?	12M	CO2	L2
		UNIT–III			
6.		With a neat sketch, Explain the architecture of 6loWPAN?	12M	CO3	L2
		OR			
7.		Explain Wireless RFID infrastructure with an example?	12M	CO3	L2
		UNIT–IV			
8.		Explain the concept of data structures and control flow in Python and its relevance in IOT application development.	12M	CO4	L2
		OR			
9.		Outline the importance of file handling in IOT application? Explain how python is used in handling the files for IOT applications? Give Example?	12M	CO4	L2
		UNIT–V			
10.		Compare Raspberry Pi with Arduino for IOT?	12M	CO5	L2
		OR			
11.		Summarize the process of interfacing sensors and actuators with Raspberry Pi with an example?	12M	CO5	L2

*** End ***

Hall Ticket Number :										

R-20

Code: 20A33M02

III B.Tech. II Semester Minors Regular Examinations May/June 2024

Fundamentals of Machine Learning

(Common to CE, EEE, ME and ECE)

Max. Marks: 70 Time: 3 Hours

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Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. In Part-A, each question carries **Two marks.**
3. Answer **ALL** the questions in **Part-A** and **Part-B**

PART-A
(Compulsory question)

1. Answer ***all*** the following short answer questions (5 X 2 = 10M) CO BL

a) Define supervised learning. CO1 L1

b) What is loss function? CO2 L2

c) Define conditional probability. CO3 L1

d) What is the metric to measure the uniformity of target function? CO4 L2

e) Define Agent. CO5 L1

PART-B
Answer *five* questions by choosing one question from each unit (5 x 12 = 60 Marks)

Marks CO BL

UNIT–I

2. a) Summarize the issues in machine learning? 6M CO1 L1

b) Define the perspectives in machine learning. How does hypothesis space represented in machine learning? 6M CO1 L2

OR

3. Apply the Candidate Elimination algorithm for the given set of training examples. Placed is the target value. Find the general and specific boundary hypothesis for the given dataset.

verbal	technical	aptitude	test1	test2	CGPA	Placed
Better	Good	Medium	High	High	Excellent	Yes
Better	Good	High	High	High	Excellent	Yes
Normal	Medium	High	High	Medium	Medium	No
Better	Good	High	High	High	Medium	Yes

12M CO1 L3

UNIT–II

4. a) Illustrate the artificial neural network with 3 inputs, 5 nodes in hidden layer and binary class output layer. Explain the forward propagation. 6M CO2 L3

b) Explain the various activation functions in machine learning. 6M CO2 L2

OR

5. Apply the ID3 decision tree algorithm to classify the given dataset. All leaf nodes should be classified as approved **Yes** or **No** in a tree. It states that advertisement is broadcasting proposal is approved or not.

Price	Newspaper	Youtube	FB	TV	Approved
30-40L	Yes	Yes	No	No	Yes
30-40L	Yes	No	Yes	Yes	Yes
40-50L	Yes	No	No	Yes	No
30-40L	Yes	Yes	Yes	Yes	Yes
20-30L	No	No	No	No	No
30-40L	Yes	No	No	Yes	No
50-60L	Yes	No	No	No	Yes
40-50L	No	No	No	Yes	No
30-40L	Yes	Yes	No	No	Yes
20-30L	No	Yes	No	Yes	No

12M CO2 L3

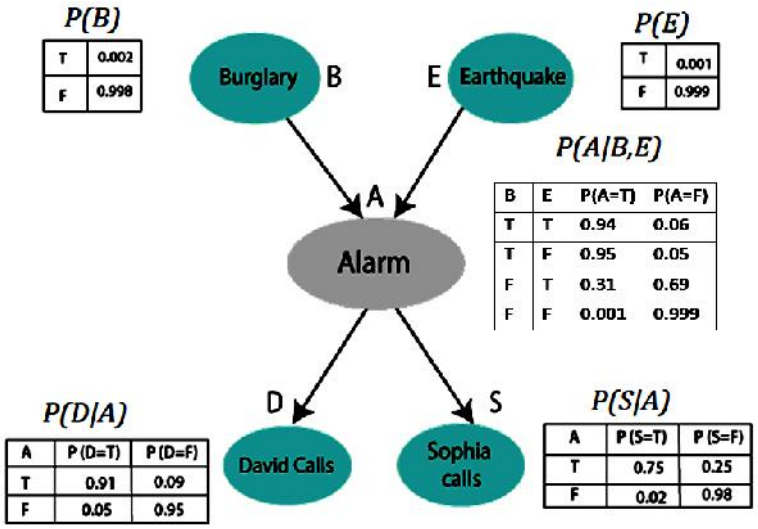
UNIT–III

6. a) Apply Bayes theorem to find Maximally A Posteriori hypothesis from hypotheses space. 6M CO3 L3

b) Describe the Minimum Description Length principle. 6M CO3 L2

OR

7. a)



Apply the BBN to calculate the probability that alarm has sounded, but there is neither a burglary, nor an earthquake occurred, and David and Sophia presumed that they heard the alarm sound**.** 6M CO3 L3

b) Describe all the necessary steps of fitness function evaluation using genetic algorithm. 6M CO3 L2

UNIT–IV

8. a) Discuss the sequential covering algorithm in learning rules. 6M CO4 L2

b) Summarize the PROLOG-EBG properties. 6M CO4 L2

OR

9. a) Explain the first order inductive learning rule. 6M CO4 L2

b) Discuss the inverted resolution rule learning. 6M CO4 L2

UNIT–V

10. a) Illustrate the markov-decision process in learning the environment. 6M CO5 L2

b) Differentiate the inductive and analytical learning. 6M CO5 L2

OR

11. a) Summarize the components and its features of reinforcement learning. 6M CO5 L2

b) How does the knowledge used to alter the search objective? 6M CO5 L2

*** End ***