Hall Ticket Number :										

R-17

Code: 7G373

IV B.Tech. I Semester Supplementary Examinations May/June 2022

Digital Signal Processing

(Electrical and Electronics Engineering)

Max. Marks: 70 Time: 3 Hours

Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)

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			Marks	CO	Blooms Level
		UNIT–I			
1.	a)	Test the following systems for Time Invariant and Stability: i) $y(n)=3\{x(n)\}$ ii) $y(n)=x^2(n)+1/x^2(n+1)$	4M	1	L3
	b)	Perform linear convolution of given two sequences using DFT: x(n)={2,2,3} and h(n)={2,1)	10M	1	L3
		OR			
2.	a)	Perform Circular Convolution for following sequences if $x_1(n)$= {1,2,3,4) & $x_2(n)$ = {2,1,2,1}	9M	1	L3
	b)	Explain Discrete Fourier Series with properties of Discrete Fourier series.	5M	1	L2
		UNIT–II			
3.	a)	Why we need FFT over DFT. Explain it with applications in DSP.	7M	1	L5
	b)	Discuss Linear filtering operation under DFT.	7M	1	L2
		OR			
4.	a)	Compute 8-point DFT of the sequence x(n)= {0,1,2,3,4,5,6,7} using DIT-FFT algorithm.	7M	1	L3
	b)	Discuss DIF-FFT & DIT-FFT algorithms.	7M	1	L2
		UNIT–III			
5.	a)	Give brief note about design of digital filters from analog filters.	7M	2	L2
	b)	Draw SFG & Matrix representation of IInd Order discrete time system.	7M	2	L4
		OR			
6.	a)	Determine canonic form Realization for following system. Y(n)=-5 y(n-1) +7 y(n-2) + x(n)- 0.25 x(n-1)	8M	2	L3
	b)	Explain the phenomenon of analog and digital frequency transformation.	6M	2	L2
		UNIT–IV			
7.	a)	List out the important properties of linear phase FIR filters.	7M	2	L1
	b)	What are limitations of FIR filter designing by Fourier series method?	7M	2	L1
		OR			
8.	a)	Design a Filter if $Hd(e^{jw})= e^{-jw}$; $-\pi/4 \le w \le \pi/4$; 0 ; $\pi/4 \le w \le \pi$ Using rectangular Window for N=5	8M	2	L3
	b)	Explain finite word length effects of Digital filters.	6M	2	L2
		UNIT–V			
9.	a)	Explain about Oversampling A/D conversion in signal processing applications.	7M	3	L2
	b)	What is need of spectral analysis with their applications?	7M	3	L5
		OR			
10.	a)	Write Short notes on signal compression technique.	8M	3	L1
	b)	Draw block diagram of Digital signal processing.	6M	3	L3

END

Hall Ticket Number :										

R-17

Code: 7G674

IV B.Tech. I Semester Supplementary Examinations May/June 2022

Disaster Management

(Common to All Branches)

Max. Marks: 70 Time: 3 Hours

Answer *any five full questions* by choosing one question from each unit (5x14 = 70 Marks)

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			Marks	CO	Blooms Level
		UNIT–I			
1.	a)	Define disaster and list out the important perceptions on disasters.	7M	CO1	L1
	b)	Explain the various hazards affecting the environment.	7M	CO1	L2
		OR			
2.	a)	Explain the relationship between hazard, disaster and vulnerability in detail.	7M	CO1	L2
	b)	Explain the risk factors of disaster.	7M	CO1	L2
		UNIT–II			
3.	a)	Explain in detail about the Tsunami.	7M	CO2	L2
	b)	Explain in detail about the Earthquakes.	7M	CO2	L2
		OR			
4.	a)	Differentiate between Natural Disasters and Manmade Disasters.	7M	CO2	L2
	b)	List a few major natural disasters that occurred in India.	7M	CO2	L1
		UNIT–III			
5.	a)	Explain in detail about the impacts of disaster on ecology.	7M	CO3	L2
	b)	List the impacts of human-induced disasters.	7M	CO3	L1
		OR			
6.	a)	Explain in detail about disaster impacts on psycho social environment.	7M	CO3	L2
	b)	Describe the trends in disaster management.	7M	CO3	L2
		UNIT–IV			
7.	a)	Discuss major issues involved in disaster preparedness.	7M	CO4	L3
	b)	Describe the different steps in relief distribution in disaster management.	7M	CO4	L2
		OR			
8.	a)	Describe structural and non-structural mitigation measures in disaster management.	7M	CO4	L2
	b)	Describe the important phases of disaster cycle.	7M	CO4	L2
		UNIT–V			
9.	a)	Discuss the environmental impacts of land use changes and urbanization	7M	CO5	L3
	b)	Explain the use of quick reconstruction technologies.	7M	CO5	L2
		OR			
10.	a)	Explain the factors to be considered while planning the rebuilding works after a major disaster due to earthquake.	7M	CO5	L2
	b)	Define sustainable development an what are the challenges of sustainable development in India	7M	CO5	L1

END

Hall Ticket Number :										

R-17

Code: 7GA71

IV B.Tech. I Semester Supplementary Examinations May/June 2022

Human Resource Management

(Common to All Branches)

Max. Marks: 70 Time: 3 Hours

Answer *any five* full questions by choosing one question from each unit (5x14 = 70 Marks)

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			Marks	CO	Blooms Level
		UNIT–I			
1.	a)	Discuss various evolutionary phases outlining the specific characteristics of each phase in shaping the development of human resource management.	7M	1	1
	b)	Elucidate any three competitive challenges influencing human resource management.	7M	1,3	2
		OR			
2.	a)	Consider you are starting a new company. Being a human resource specialist, write in detail how would you set up an HR Department. Give focus to details of the various processes involved.	7M	1,4	5
	b)	Distinguish between managerial and competitive challenges influencing human resource management.	7M	1,4	3
		UNIT–II			
3.	a)	Explain various barriers to human resource planning.	7M	2,3	3
	b)	Define job analysis, job description and job specification. Analyze the job role of a project manager.	7M	1,3	4
		OR			
4.	a)	Paristo is a start-up E-commerce company which was incorporated recently with a vision of reaching 100 Crore turnover in the first 5 years. As a HR Manager, explain the steps involved in preparing human resource planning for the first five years to meet the 100 Crore turnover target.	7M	3,5	6
	b)	Present the factors that affect the job design.	7M	3,4	4
		UNIT–III			
5.	a)	Discuss the different types of recruitment practices followed in an organization?	7M	1,4	4
	b)	Compare any two selection tests and identify a better selection test for a sales person job considering the problem of bias in the selection tests.	7M	3,4	5
		OR			

6.	a)	Orienting employees to their workplaces and their jobs is one of the most neglected functions in many organizations. What happens when orientation to new employees is not carried effectively?	7M	4,5	6
	b)	What do you mean by social media recruiting? Evaluate the effectiveness of recruitment process through social media.	7M	4,5	5

UNIT–IV

7.	a)	Training like any other human resource function, should be evaluated to determine its effectiveness". Present various ways to evaluate training.	7M	3,4	5
	b)	Present various career stages for a job role of your choice in IT sector.	7M	1,4	5

OR

8.	a)	You are the HR Manager of the Zoyato company, which is a BPO. You have recently recruited HR trainees for the company. Carefully device Training plan for the new trainees.	7M	3,5	6
	b)	Compare the advantages and disadvantages of training.	7M	3,4	4

UNIT–V

9.	a)	As a HR Manager of an IT company device a suitable performance appraisal system considering the latest trends in IT industry.	7M	4,5	6
	b)	Define Collective bargaining process. Present any one case on collective bargaining.	7M	2,15	5

OR

10.	a)	Contrast any three performance appraisal methods and suggest a suitable appraisal method for a frontline service employees of ITC hotel.	7M	1,5	4
	b)	Explain how rewards increases employee motivation and performance.	7M	2,5	5

****END****

Hall Ticket Number :										

R-17

Code: 7G576

IV B.Tech. I Semester Supplementary Examinations May/June 2022

Management Science

(Electrical and Electronics Engineering)

Max. Marks: 70 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

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			Marks	CO	Blooms Level
		UNIT–I			
1.		What are the various types of Organization Structures? Explain their merits and demerits.	14M	C1	L1
		OR			
2.	a)	Explain Henri Fayol 's 14 Principles of Management.	9M	C1	L2
	b)	What is an Organization Chart? Explain Features of Organization Chart?	5M	C1	L1
		UNIT–II			
3.	a)	Differentiate between Methods of Production.	6M	C2	L2
	b)	Describe the Elements of Marketing Mix.	8M	C6	L5
		OR			
4.	a)	Define Plant Layout and Explain any two types of Plant Layouts with their relative advantages and disadvantages.	9M	C2	L4
	b)	Distinguish between A, B, C Items in ABC Analysis.	5M	C4	L2
		UNIT–III			
5.	a)	Explain the basic Functions of HR Manager.	7M	C6	L2
	b)	Compare and contrast Job Evaluation vs. Performance Appraisal.	7M	C6	L2
		OR			
6.	a)	What do you mean by Industrial Relations? Write down some important objectives of Industrial Relation.	7M	C6	L1
	b)	Discuss the various steps involved in Selection Process.	7M	C6	L3
		UNIT–IV			
7.	a)	What is the importance of Capital Budgeting? Explain the basic steps involved in evaluating Capital Budget Proposals?	4M	C4	L1
	b)	A Project 9-activities, the expected time for each activity is given below. Draw the Project network and identify critical path. Show the earliest, latest expected times on the network. Compute project duration.			

S.No	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Activity	1-2	1-3	1-4	2-5	3-5	3-6	4-6	5-6	6-7
Time in Hours	1	3	4	3	4	5	5	5	2

10M C5 L6

OR

8.	a)	What are the components of Working Capital? Explain each of them?	7M	C4	L1
	b)	Evaluate the rules of constructing Network Diagram.	7M	C5	L5
		UNIT–V			
9.	a)	What are the factors that are critical for the success of the ERP implementation?	7M	C5	L1
	b)	What are the principles of Ethics?	7M	C5	L1
		OR			
10.	a)	What are the major benefits of JIT system?	7M	C5	L1
	b)	What are the aims and objectives of Professional Ethics?	7M	C5	L1

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Hall Ticket Number :										

R-17

Code: 7G271

IV B.Tech. I Semester Supplementary Examinations May/June 2022

Power Semiconductor Drives

(Electrical and Electronics Engineering)

Max. Marks: 70 Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

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			Marks	CO	Blooms Level
		UNIT–I			
1.		Explain speed-torque characteristics of 1-Ø fully controlled rectifier connected to DC separately excited motor with continuous and discontinuous mode of operation. Draw its relevant waveforms.	14M	1	2
		(OR)			
2.	a)	Explain the operation of 1-Ø half controlled rectifier fed series motor drive circuit and draw its speed –torque characteristics.	7M	1	2
	b)	A 220V, 1500 rpm, 50A separately excited motor with armature resistance of 0.5Ω is fed from a 3-Ø fully controlled rectifier available AC source has a line voltage of 440V, 50Hz star-delta connected transformer is used to feed the armature so that motor terminal voltage equals rated voltage when converter firing angle is zero. (i) Calculate transformer turns ration. (ii) Determine the value of firing angle when motor is running at 1200 rpm and rated torque.	7M	1	3
		UNIT–II			
3.	a)	Explain the concept of four quadrant operation of DC drives.	7M	2	2
	b)	Explain the different electric braking methods for DC separately excited motor.	7M	2	2
		(OR)			
4.	a)	Compare the circulating current and non-circulating current modes in a dual converter.	7M	2	4
	b)	A 220V, 980rpm, 75A DC separately excited motor has an armature resistance of 0.025Ω. It is braked by plugging from an initial speed of 1050rpm. Calculate braking resistance to limit the braking current to twice the full load value.	7M	2	3
		UNIT–III			
5.		Derive the expression for speed and torque of a two quadrant chopper fed DC separately excited motor with continuous mode of operation and also draw the speed torque characteristics.	14M	3	2
		(OR)			
6.	a)	Explain closed loop operation of chopper fed DC motor drives with the help of block diagram.	7M	3	2
	b)	A 230V, 960 rpm and 200A separately excited Dc motor has R_a = 0.02Ω. The motor is fed from a chopper which provides both motoring and braking operations. Assume continuous conduction. Calculate duty ratio of chopper for motoring and braking operations at rated torque and 350 rpm.	7M	3	3
		UNIT–IV			
7.	a)	Explain the concept of slip power recovery with the help of closed loop control of Static Scherbius drive.	7M	4	2
	b)	Explain with the help of block diagram the closed loop speed control of CSI drives.	7M	4	2

(OR)

8.	a)	Explain in detail about the variable frequency control of induction motor by Voltage Source inverter.	7M	4	2
	b)	A Y-connected squirrel cage induction motor has following ratings and parameters: 400V, 50 Hz, 4-pole, 1370 rpm, $R_s = 2\Omega$, $R_1^1 = 3\Omega$, $X_s = X_r^1 = 3.5\ \Omega$. Motor is controlled by a voltage source inverter at constant v/f ratio. Inverter allows frequency variation form 10 to 50 Hz. Obtain a plot between the breakdown torque and frequency.	7M	4	3

UNIT–V

9.	a)	Explain the operation of self-controlled synchronous motor by VSI converter.	7M	5	2
	b)	List down the advantages and applications of self-controlled synchronous motor drives.	7M	5	1,4

(OR)

10.		A synchronous motor is controlled by a load commutated inverter, which in turn is fed from a line commutated converter. Source voltage is 6.6KV, 50Hz. Load commutated inverter operates at a constant firing angle α_1 of 140^0 and when rectifying $\alpha_1 = 0^0$. DC link inductor resistance $R_d = 0.1\Omega$. Drive operates in self-controlled mode with a constant v/f ratio. Motor has the details: 8MW, 3-Ø, 6600v, 6-pole, 50 Hz, Unity power factor, Y connected, $X_s = 2.8\Omega$, $R_s = 0$. Determine source side converter firing angles for the following: (i) Motor operation at the rated current and 500 rpm. What will be the power developed by motor? (ii) Regenerative braking operation at 500 rpm and rated motor current. Also calculate power supplied to the source.	14M	5	3

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Hall Ticket Number :										

R-17

Code: 7G273

IV B.Tech. I Semester Supplementary Examinations May/June 2022

Distribution of Electric Power

(Electrical and Electronics Engineering)

Max. Marks: 70 Time: 3 Hours

Answer *any five* full questions by choosing one question from each unit (5x14 = 70 Marks)

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			Marks	CO	Blooms Level
		UNIT-I			
1.	a)	Briefly discuss different types of distribution systems	7M	1	2
	b)	A 2 wires dc distributor cable AB is 2 km long and supplies loads of 100A, 150A, 200A and 50A situated 500m, 1000m, 1600m and 2000m from the feeding point A. Each conductor has a resistance of 0.01 ohm per 1000m. calculate potential difference at each load point if a potential difference of 300V is maintained at point A.	7M	2	3
		OR			
2.		Discuss different types of loads present in distribution system and explain their characteristics?	14M	1	2
		UNIT-II			
3.	a)	Derive the relationship for voltage drop and power loss for uniformly radial type distribution load	7M	2	6
	b)	Explain objectives of distribution system protection in detail	7M	2	2
		OR			
4.	a)	Describe the principle of operation of (i) line sectionalizers (ii) circuit breaker	7M	3	2
	b)	Compare the radial and loop type primary feeders	7M	2	5
		UNIT-III			
5.		Explain different busbar arrangement with neat sketch.	14M	3	2
		OR			
6.	a)	Draw the substation layout by showing the location of all substation equipment and outline each of them	8M	3	4
	b)	Explain the single bus bar arrangement in substation?	6M	2	2
		UNIT-IV			
7.		Briefly write the various methods adopted for voltage control and write the merits and demerits of it	14M	4	2
		OR			
8.	a)	Compare and explain the role of shunt and series capacitors for power factor correction	7M	4	5
	b)	A single phase motor connected to a 230V, 50Hz supply takes 25A at p.f. of 0.7 lag. A capacitor is shunted across the motor terminals to improve the p.f. to 0.9 lag. Determine the capacitance of the capacitor to be used.	7M	4	5
		UNIT-V			
9.		Draw a block diagram and explain for a typical distribution system planning process	14M	5	2
		OR			
10.		What is meant by load forecasting and classify types of load forecasting.	14M	5	1

END