

Code No: 80H05

MR18(2018-19)

HT.NO:

**MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)**

Maisammaguda, Dhulapally, (Post Via Kompally), Secunderabad-500100.

B.TECH IV YEAR I SEMESTER REGULAR EXAMINATIONS, JANUARY-2022**SUBJECT: Management Fundamentals****BRANCH: COMMON TO EEE, ECE & IT****Time: 3 hours****Max. Marks: 70****Answer all questions****5X14M=70 M****All Questions carries equal marks**

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Q. NO.	QUESTIONS									MARKS	*BT LEVEL	CO																				
1.	a) Define Management? Write its Functions. b) Explain the importance of management.									7 7	L3	1																				
	OR																															
2.	a) Explain various leadership styles. b) Explain the difference between McGregor's theory X and theory Y.									7 7	L2	1																				
3.	a) Why we need to Plan? Explain steps in process of planning. b) Explain modern organizational structure of organization.									7 7	L2	2																				
	OR																															
4.	a) Distinguish between line and staff organization. b) What is planning and types of planning?									7 7	L3	2																				
5.	a) Define HRM write its functions. b) Discuss various principles of organization.									7 7	L2	3																				
	OR																															
6.	a) Explain the following i) R Chart ii) C Chart. b) Define the Recruitment. Explain different sources of recruitment.									7 7	L2	3																				
7.	a) What is mean by work study? Write basic procedure involved in method study. b) Identify the steps involved in process of controlling.									7 7	L2	4																				
	OR																															
8.	a) Discuss EOQ and ABC Analysis. b) Illustrate the three main methods of production.									7 7	L2	4																				
9.	a) Outline the principles of TQM and explain in detail. b) Explain the steps involved in capability maturity model.									7 7	L3	5																				
	OR																															
10.	a) Draw network and identify critical path for the following data:									7	L4	5																				
	<table><tr><td>Activity</td><td>1-2</td><td>2-3</td><td>2-4</td><td>2-5</td><td>3-5</td><td>3-6</td><td>4-5</td><td>4-6</td><td>5-6</td></tr><tr><td>Time (Days)</td><td>5</td><td>3</td><td>1</td><td>6</td><td>2</td><td>2</td><td>3</td><td>4</td><td>5</td></tr></table>												Activity	1-2	2-3	2-4	2-5	3-5	3-6	4-5	4-6	5-6	Time (Days)	5	3	1	6	2	2	3	4	5
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Time (Days)	5	3	1	6	2	2	3	4	5																							
	b) What is the importance of network diagrams in project management? Explain List the rules for drawing network diagrams.																															

*Bloom's Taxonomy Level (BT Level): L1-Remember, L2- Understand, L3- Apply, L4- Analyse, L5- Evaluate, L6- Create.

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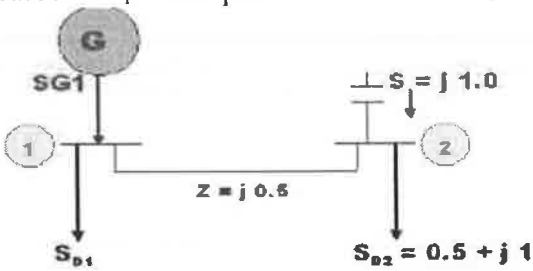
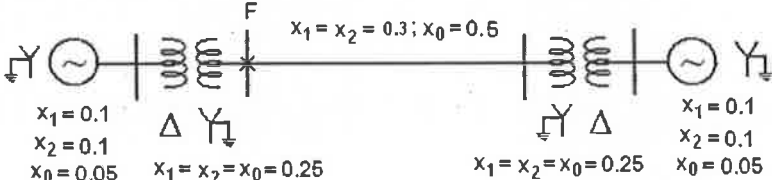
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B.TECH IV YEAR I SEMESTER REGULAR EXAMINATIONS, JANUARY-2022**SUBJECT: Power System Analysis and Control****BRANCH: EEE****Time: 3 hours****Max. Marks: 70****Answer all questions****5X14M=70 M****All Questions carries equal marks**

Q.NO.	QUESTIONS	MARKS	*BT LEVEL	CO
1.	What is primitive network matrix and represent its forms? Prove $Y_{bus} = A^t[y]A$ using singular transformation.	14	L2	1
	OR			
2.	Form Y bus for the network by direct inspection method: Element Positive sequence reactance E-A 0.04 E-B 0.05 A-B 0.04 B-C 0.03 A-D 0.02 C-F 0.07 D-F 0.10	14	L3	1
3.	Draw the flow chart for decoupled method and explain.	14	L2	2
	OR			
4.	Obtain the voltage at bus 2 for the system shown in figure below using Gauss Seidel method if $V_1 = 1 \angle 0^\circ$ pu. 	14	L3	2
5.	Derive the equation for fault current and line to ground voltages during single line to line fault using symmetrical components.	14	L3	3
	OR			
6.	For the system shown in figure below. A LLG fault occurs at point F. Find fault current. 	14	L4	3
7.	a) Explain the importance of stability analysis in power system planning and operation. b) Derive the swing equation for a single machine infinite bus system.	7 7	L3 L4	4 4
	OR			

8.	Derive the solution of swing equation by modified Euler method.	14	L4	4
9.	a) Two generators rated 200 MW and 400 MW are operating in parallel. The droop characteristics of their governors are 4 % and 5% respectively from no load to full load. Assuming that the generators are operating at 50 Hz at no load, how would a load of 600 MW be shared between them? What will be the system frequency at this load? Assume free governor operation. b) Explain the governor modelling of a speed governor system with its block diagram.	6 8	L3 L3	5 5
OR				
10.	Explain the proportional plus integral control of single area load frequency control.	14	L3	5

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B.TECH IV YEAR I SEMESTER REGULAR EXAMINATIONS, JANUARY-2022**SUBJECT: Utilization of Electrical Energy****BRANCH: EEE.****Time: 3 hours****Max. Marks: 70****Answer all questions****5X14M=70 M****All Questions carries equal marks**

Q.NO.	QUESTIONS	MARKS	*BT LEVEL	CO
1.	a) Explain in brief how heating is done in the following cases: i) Resistance heating, ii) Induction heating b) Explain seam welding and mention its applications.	7 7	L2 L3	1 1
	OR			
2.	a) Distinguish between Direct Resistance heating and Indirect resistance heating. b) Explain with neat sketches, the construction, working principle and application of Ajax Wyatt furnace.	7 7	L4 L2	1
3.	a) Explain with a neat diagram, the principle of operation of a sodium vapor lamp. Mention its use. b) A 500 W lamp having M.S.C.P of 800 is suspended 3m above the working plane. i) Illumination directly below the lamp at the working plane. ii) Lamp efficiency iii) Illumination at a point 2.4 m away on the horizontal plane from vertically below the lamp.	7 7	L2 L3	2
	OR			
4.	a) Explain with neat diagram and working of a Fluorescent tube. b) Define and explain the terms illumination and illumination intensity in detail?	7 7	L2 L2	2
5.	a) An electrical train weighting 400 tonnes moves up a gradient of 1% with the following speed time curve: i) Acceleration of 1.5 kmphps for 25s, ii) Constant speed for 40s. iii) Coasting for 30s, iv) Braking at 3 kmphps to rest. Determine the specific energy consumption if tractive resistance is 50 N per tonne, rotational inertia 10%. Overall efficiency of the system 80%. b) Explain various methods of electric braking. State the conditions to be fulfilled for each method of braking.	7 7	L3 L2	3
	OR			
6.	a) Explain in brief: (i) Power & energy output from driving axles, (ii) Specific energy & (iii) regenerative braking in traction motors. b) Explain the significance of speed time curves? And give its merits.	7 7	L2 L2	3
7.	For a trapezoidal speed-time curve of an electric train, derive expression for maximum speed and distance between stops.	14	L4	4
	OR			

8.	a) Define the term tractive effort. Derive the condition for tractive effort required to balance the gravitational pull.	7	L4	4
	b) A train is required to run between the two stations 1.5 km apart at a schedule speed of 36 kmph, the duration of stop being 25 sec. The braking retardation is 3 kmphs. Assuming a trapezoidal speed/time curve, calculate the acceleration if the ratio of maximum speed to average speed is to be 1.25.	7	L2	
9.	a) List the advantages and disadvantages of electric vehicles	7	L2	5
	b) Compare different types of drives used in electric vehicles	7	L2	
OR				
10.	a) Dissect the environmental importance of EV and their social impacts	7	L4	5
	b) Discuss the history of hybrid electric vehicles.	7	L2	

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B.TECH IV YEAR I SEMESTER REGULAR EXAMINATIONS, JANUARY-2022**SUBJECT: Electrical Hybrid Vehicles****BRANCH: EEE****Time: 3 hours****Max. Marks: 70****Answer all questions****5X14M=70 M****All Questions carries equal marks**

Q.NO.	QUESTIONS	MARKS	*BT LEVEL	CO
1.	a) Compare hybrid electric vehicles with Conventional IC Engine vehicles on various parameters.	7	L3	1
	b) Explain the impact of modern drive trains on energy supplies.	7	L3	
	OR			
2.	a) Explain the social and environmental importance of Electric and Hybrid Electric Vehicles.	7	L2	1
	b) Describe the performance of Electric and Hybrid Electric Vehicles.	7	L2	
3.	a) Explain power flow control in Hybrid Electric Vehicle drive train topologies.	7	L3	2
	b) Discuss the basic concepts of electric traction.	7	L3	
	OR			
4.	Explain the parallel configurations of Hybrid Electric Vehicle drive train with neat diagram.	14	L3	2
5.	a) Explain the four quadrant chopper control of dc motors used in hybrid electric vehicles.	7	L3	3
	b) Illustrate the configuration and control of induction motor drives used in hybrid electric vehicles	7	L2	
	OR			
6.	a) List out different types of rechargeable batteries considered for electric hybrid vehicles. Compare them in detail.	7	L3	3
	b) Explain the hybridization of various energy storage devices, its advantages and challenges.	7	L3	
7.	Explain briefly the electrical and mechanical constraints to be considered while sizing an electrical machine for HEV.	14	L3	4
	OR			
8.	a) Compare the performance of internal combustion engine (ICE) based vehicle with hybrid electrical vehicle.	7	L3	4
	b) Explain the sizing procedure of propulsion motor for electric hybrid vehicle.	7	L3	
9.	Explain different categories of energy management strategies in electric vehicles and hybrid electric vehicles.	14	L4	5
	OR			
10.	a) Explain about Control Area Network (CAN) application to electrical vehicle.	7	L4	5
	b) State the functions of the communication network in Electric Vehicles.	7	L4	

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