

PRAGATI ENGINEERING COLLEGE: SURAMPALEM
(AUTONOMOUS)
III B.Tech I Semester Supplementary Examinations, May - 2024
INDUSTRIAL ENGINEERING AND MANAGEMENT
(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70 M

Answer ONE Question from each Unit
All Questions Carry Equal Marks

Q. No.		Questions	BTL	CO	Marks							
UNIT – I												
1.	a)	What are the functions of Management? Explain them.	K2	CO1	7M							
	b)	Explain the characteristics of Line organization with structure diagram.	K2	CO1	7M							
OR												
2.	a)	Explain the advantages and limitations of Line and staff organization	K2	CO1	6M							
	b)	Discuss the advantages and limitations of selecting rural site and urban site for beverage industry.	K2	CO1	8M							
UNIT – II												
3.	a)	What type of layout is preferable for automobile assembly industry? Discuss the features of that layout with diagram.	K2	CO2	8M							
	b)	Draw flow process chart for production of casting with sand casting technique in a foundry shop.	K2	CO2	6M							
OR												
4.	a)	What are therbligs? Explain them with symbols.	K2	CO2	7M							
	b)	Define rating. Explain rating methods in practice to arrive the normal time to perform the operation.	K2	CO2	7M							
UNIT – III												
5.	a)	Compare variable measurement and attribute measurement with examples.	K2	CO3	5M							
	b)	A manufacturing process is selected to produce components with specifications $15\pm 1\text{mm}$. Seven samples with sample size 5 are collected. The data collected is given in the table. Control limit factors for sample size 5 are $A_2=0.577$ $D_3=0$ $D_4=2.114$ and $\sigma = 2.326$. Construct mean chart and range chart.	K3	CO3	9M							
		SAMPLE NUMBER				1	2	3	4	5	6	7
		MEAN (mm)				15.36	15.04	15.82	15.36	15.98	15.34	15.54
		Range(mm)				1.5	1.2	1.9	1.6	1.9	1.4	1.8
OR												
6.	a)	Compare single sampling plan with double sampling plan along with advantages and limitations.	K2	CO3	8M							
	b)	i)Explain the Need for ISO 9000 Quality System	K2	CO3	6M							

		ii) What are the benefits of ISO 9000 standards?																																	
UNIT – IV																																			
7.	a)	Define Industrial dispute. Discuss the internal causes and external causes for industrial disputes.	K2	CO4	7M																														
	b)	Explain the contents of Workmen's Compensation Act.	K2	CO4	7M																														
OR																																			
8.	a)	Explain the features of wage incentive plans.	K2	CO4	8M																														
	b)	Compare job evaluation with merit rating.	K2	CO4	6M																														
UNIT – V																																			
9.	A Project consists of 9 activities. The relationship between the activities and the time required to perform them is given in the table. <table><tr><td>Activity</td><td>Preceding Activity</td><td>Duration [Weeks]</td></tr><tr><td>A</td><td>-----</td><td>4</td></tr><tr><td>B</td><td>A</td><td>12</td></tr><tr><td>C</td><td>A</td><td>10</td></tr><tr><td>D</td><td>A</td><td>9</td></tr><tr><td>E</td><td>C</td><td>5</td></tr><tr><td>F</td><td>B,E</td><td>14</td></tr><tr><td>G</td><td>C</td><td>11</td></tr><tr><td>H</td><td>D</td><td>10</td></tr><tr><td>I</td><td>F,G,H</td><td>7</td></tr></table>		Activity	Preceding Activity	Duration [Weeks]	A	-----	4	B	A	12	C	A	10	D	A	9	E	C	5	F	B,E	14	G	C	11	H	D	10	I	F,G,H	7	K3	CO5	14M
Activity	Preceding Activity	Duration [Weeks]																																	
A	-----	4																																	
B	A	12																																	
C	A	10																																	
D	A	9																																	
E	C	5																																	
F	B,E	14																																	
G	C	11																																	
H	D	10																																	
I	F,G,H	7																																	
a) Draw the Project Network diagram. Find the time required to complete the Project. b) Calculate EST and LST of the activities. c) Compute Total Float of the activities.																																			
OR																																			
10.	a)	What is the difference between value analysis and value Engineering? Explain the steps in conducting value analysis.	K2	CO5	7M																														
	b)	What is the need for crashing the project. Explain the procedure to arrive optimal crashing period with graph.	K2	CO5	7M																														