

**R16**

Code No: 137DJ

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech IV Year I Semester Examinations, July - 2021**

**INDUSTRIAL MANAGEMENT**

**(Mechanical Engineering)**

**Time: 3 Hours**

**Max. Marks: 75**

**Answer any Five Questions**

**All Questions Carry Equal Marks**

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- 1.a) List of the importance of management.  
b) Write the importance of Maslow's theory of human needs.  
c) Explain in detail about Taylor's scientific method of management. [5+5+5]
- 2.a) What is an inverted pyramid structure?  
b) Explain the theory of McGregor's theory of X and theory Y in detail by suitable example. [7+8]
- 3.a) Write about the various quantitative techniques used in optimal design of a plant layout.  
b) Differentiate between group technology layout and product layout. [8+7]
- 4.a) What is meant by consumer risk and producer risk in a OC curve.  
b) Differentiate between control charts for attributes and control charts for variables in detail.  
c) What are the desirable characteristics for a sample taken for a sampling plan? Explain. [5+5+5]
- 5.a) Define the terms Job description and job evaluation.  
b) Enumerate the various steps involved in job evaluation?  
c) What is meant by job crashing? How it is done? [5+5+5]
- 6.a) Differentiate between PERT and CPM.  
b) For the following table of information i) Draw the network diagram and ii) Determine the critical path(s). [8+7]

Activity	Duration	Dependency	Float
Start	0 days		
A	5 days	Start	
B	2 days	Start	
C	3 days	A,B	
D	5 days	Start	
E	6 days	Start	
F	4 days	D,E	
G	2 days	C,F	
H	5 days	G	
I	7 days	G	
J	3 days	H	
Finish	0 days	I,J	

- 7.a) The results of inspection of 10 samples each containing 4 units are tabulate din the flowing form. Compute the control limits for the X and R charts.

No of Observations	Subgroup size				Average	Range
	A	B	C	D	X	R
1	47	32	44	35	39.50	15
2	33	33	34	34	33.50	1
3	34	34	31	34	33.25	3
4	12	21	24	47	26.00	35
5	35	23	38	40	34.00	17
6	19	37	31	27	28.50	18
7	23	45	26	37	32.75	22
8	33	12	29	43	29.25	31
9	25	22	37	33	29.25	15
10	29	32	30	13	26.00	19

- b) Analyze the differences between the inspection and quality control.

[7+8]

8. A project has ten activities, the expected time of each activity is as follows:

Activity	1-2	2-3	3-6	2-4	1-5	5-6	4-6	5-7	7-8	6-8
Expected time (days)	6	4	5	5	4	7	11	9	12	3

- a) Draw the network for the given project work.  
 b) Identify the critical path.  
 c) Find the project duration.  
 d) Find the slack at each event.

[15]

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