

16 AGS-10302

**R15**

Code No: 127DV

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, November/December - 2018

INDUSTRIAL MANAGEMENT

(Mechanical Engineering)

Time: 3 Hours

Max. Marks: 75

**Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART - A****(25 Marks)**

- 1.a) What is the core concept of empirical school of management thought? What are its strengths and weaknesses. [2]
- b) Distinguish between schools of thoughts regarded as Taylorism and Fayolism? [3]
- c) Define virtual organization. [2]
- d) What do you understand by the term "principle of balance" in an organization? [3]
- e) What are the different types of values? Define each of them. [2]
- f) Give the suitability of application of Fixed Position Layout. What are its advantages and limitations. [3]
- g) List out the factors that are to taken care of while conducting a method study. [2]
- h) Distinguish between Control limits and Tolerance limits. [3]
- i) Distinguish between Job Evaluation and Merit Rating. [2]
- j) What are common errors of network techniques? [3]

**PART - B****(50 Marks)**

- 2.a) Distinguish between Maslow's theory of needs and Herzberg's two factor theory toward motivation.
- b) Brief out Luther Gullick's management functions. [5+5]

**OR**

- 3.a) Compare the characteristics of two different types of people classified under Theory X and Theory Y.
- b) State and explain Henry Fayol's principles of management. [5+5]

- 4.a) Define the term "organization." How do you strike balance between authority and responsibility?

- b) Can you imagine a complete formal organization without any informal content? If so, explain how would it be? What consequences do you expect in such organization in long run? [5+5]

**OR**

- 5.a) Do matrix organization violate the Fayol's conventional principles of organization? If so, what principles do they violate? Are they justified? Give examples.

- b) What are the situations which warrant adopting a committee organization? [5+5]

- 6.a) With the help of suitable examples, explain how you can convert a job order production into mass production.
- b) Explain the factors that influence the layout decision. [5+5]
- OR**
- 7.a) Distinguish between Continuous and Intermittent production systems?
- b) Design the best suitable layout plan for a cement factory (assume the data such as sequence of operations, type and number of machines and facilities arbitrarily). [5+5]
- 8.a) Describe the charts used to evaluate the quality of variables.
- b) To fix up the standard time of a particular work, 5 operators were kept under observation for 4 days by a sample study group. Performance ratings and number of times the workers were found working each day are noted and given below. The total number of observations on each day was 50. The working hours per day are 8 hrs and the total products produced during these four days are 1,200. Calculate the standard time for the job. Assume 10% allowance. [5+5]

Operator No.	Performance Rating	No. of times found working			
		1 <sup>st</sup> Jan 2010 (X <sub>1</sub> )	2 <sup>nd</sup> Jan 2010 (X <sub>2</sub> )	3 <sup>rd</sup> Jan 2010 (X <sub>3</sub> )	4 <sup>th</sup> Jan 2010 (X <sub>4</sub> )
1	100	5	8	7	10
2	110	10	9	6	8
3	120	10	10	9	11
4	125	9	8	8	7
5	130	10	5	12	7

- OR**
- 9.a) How can work study be used for arriving at manufacturing budget & production plan?
- b) A company manufactures certain pipes of outer diameter  $10.50 \pm 0.03$  cm, and daily five samples are collected randomly from the manufactured lot and three measurements are taken at different spots on each of the pipe. The readings are given in the following table. Construct appropriate control charts and calculate the control limits. Give your comments. (Given  $A_2 = 1.02$ ;  $D_3 = 0$ , and  $D_4 = 2.57$  for  $n = 3$ .) [5+5]

Sample Number	Measurement per sample x (cm)		
	1	2	3
1	10.499	10.494	10.495
2	10.505	10.488	10.489
3	10.487	10.498	10.515
4	10.499	10.490	10.508
5	10.514	10.492	10.509

- 10.a) Briefly explain the point and rank methods of job evaluation.
- b) Describe the following terms with reference to project management. Explain how they vary while crashing with the help of a hypothetical graph. (i) Direct costs (ii) Indirect costs (iii) Total cost [5+5]

**OR**

105

- 11.a) How does one ensure that "job evaluation evaluates the job and not the man"?
- b) The particulars of cost and duration of a project are given below. Draw the network for normal cost and find the critical path time and minimum cost of the project. Given is indirect cost as Rs. 600 per day. [5+5]

Activity	Normal cost		Crash cost	
	Days	Cost (Rs.)	Days	Cost (Rs.)
1-2	3	500	2	1000
1-3	2	750	1	1500
1-4	6	1400	4	2600
2-4	5	1000	3	1800
2-5	7	1150	6	1450
3-5	2	800	2	800
4-5	4	1000	2	2400

--ooOoo--