7E7015

B. Tech. VII Sem. (Main / Back) Exam., Nov. – Dec. - 2018
Mechanical Engineering
7ME5A Operations Management

Time: 3 Hours   Maximum Marks: 80
                                                     Min. Passing Marks: 26

Instructions to Candidates:

Attempt any **five questions**, selecting **one question** from **each unit.** All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.

Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL _____   2. NIL _____

UNIT- I

Q.1 Explain applications of Operations management. Discuss techniques of demand

forecasting.   [8+8=16]

OR

Q.1 Differentiate between:

   (a) Time series methods Vs Regression methods   [4]

   (b) Accuracy Vs Control of forecasts.   [4]

   (c) Qualitative method of demand Vs Quantitative method.   [4]

   (d) Statistical technique Vs Operations research techniques. [4]

UNIT- II

Q.2 Explain capacity planning. Write about determinants of effective capacity. [16]

OR

Q.2 Describe evaluation of alternatives. Explain Cost – Volume analysis. [8+8=16]

UNIT- III

Q.3 Write short notes on:

    (a)   Cellular layouts [4]

    (b)   Combination layout [4]

    (c)   Bill of Material [4]

    (b)   Line balancing [4]

OR

Q.3 Write in brief about qualitative and quantitative techniques of location. [16]

UNIT- IV

Q.4 Describe production control function and also explain lean operation system. [16]

OR

Q.4 A machine operator has to perform three operations – turning, threading & knurling on a number of different jobs. The time required to perform these operations (is in minutes) for each job is known. Determine the order in which the jobs are to be processed so as to minimize the total time required to turn out all the jobs. [16]

Time (minutes)			
Jobs	Turning	Threading	Knurling
1	3	8	13
2	12	6	14
3	5	4	9
4	2	6	12
5	9	3	8
6	11	1	13

Also find:

(a) Total elapsed time

(b) Idle time for each machine/operations

UNIT- V

Q.5 Describe project management and write in detail about project life cycle. Discuss in

brief about work break down structure. [4+4+8+16]

OR

Q.5 (a) Write about supply chain management. Discuss the need of supply chain

management. [4+8=12]

(b) Draw the network diagram from the following activities & number the events: [4]

(i)

Activity	A	B	C	D	E	F	G	H
Immediate Predecessors	-	-	A	A	B	B	D,E	F,G

(ii)

Activity	A	B	C	D	E	F	G	H
Immediate Predecessors	-	-	-	A,B	B,C	C	D	G,E,F