

(29)

SVKM's  
NARSEE MONJEE INSTITUTE OF MANAGEMENT STUDIES (NMIMS)

[Deemed-to-be-University]

SCHOOL OF DISTANCE LEARNING

SUBJECT: Management of Machines and Materials

Semester II, 2009-2010    First Year    Max Marks: 100    Time: 3 hours

DATE: 5.01.2010    TIME:- 11 a.m. to 2 p.m.

**Instructions:** Candidates should read carefully the instructions printed on the question paper and on the cover of the answer book, which is provided for their use

- Note:**
- 1) Cell phones, for any purpose, not allowed
  - 2) Instructions relating to choice in answering the questions is given at the beginning of each question/questions
  - 3) Marks allotted for each question is given at the beginning of the question

*DM/PGDM/DBM/PGDBM - SEM II, DFM/PGDFM/DFRM/PGDFRM - SEM II*

Answer **any two** questions out of question numbers (1), (2), (3) and (4). Each of these questions carries **5 marks**

- Q1) Explain, with examples, Batch Production system
- Q2) What is 'producibility'? How does it affect product selection?
- Q3) Enumerate the uses of work sampling
- Q4) Explain what is Helgeson and Birnie method?

Write **short notes** on **any three** out of five given in question number 5 below. Each short note carries **5 marks**

- Q5) a)  $\bar{X}$  and R charts
- Q5) b) Value Engineering Process
- Q5) c) Waste Collection Systems
- Q5) d) VED Analysis
- Q5) e) Centralized v/s decentralized purchases

Attempt **any three** questions out of five questions from question numbers (6), (7), (8), (9) and (10). Each of the questions carries **15 marks**

- Q6) What are the reasons for classifications, codifications and standardization of materials? What are the common classification systems? State the advantages of codification.

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- Q7) Discuss the major functions of stores in an Organization. What are the advantages and disadvantages of centralized and decentralized stores in an Organization.
- Q8) Why are suppliers sometimes helpful in value analysis programmes? How can they be helpful? Does it violate your concept of good business ethics to involve them in your problems?
- Q9) Draw a precedence diagram for changing a car tyre. Discuss the way in which this job could be done with a flow shop configuration. Suggest a possible division of labour that would produce a reasonable line balance
- Q10) Eight jobs must be processed through a two-machine flow shop. The processing times for each job on both the machines are given below. Determine the schedule to minimize makespan

Job	1	2	3	4	5	6	7	8
Processing time (M <sub>1</sub> )	10	12	13	7	8	5	4	3
Processing time (M <sub>2</sub> )	4	9	11	8	7	5	10	2

*Question numbers (11 a) and (11 b) are both compulsory. Each of the questions carries 15 marks*

- Q11a) The following table lists a set of 9 activities together with their sequence requirements, estimated activity times and the daily number of men required for each activity. These nine activities make up a complete project

Activity Code	Code of Immediate Predecessor	Time Required (days)	Men Required per day
A	—	10	3
B	—	8	4
C	—	5	7
D	A	6	5
E	B	4	2
F	C	10	4
G	F	4	3
H	F	8	3
I	D, E, G	7	3

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- a) Develop a network diagram
- b) Determine the earliest start (ES) , earliest finish (EF) , latest start (LS) , and latest finish (LF) times for each activity
- c) List the activities on the critical path

**Q11b)** Define job design. How has management viewed job design since the industrial revolution? List the important factors that must be addressed in job design and briefly discuss the importance of each one.

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