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MFW-033

M.Sc. FOOTWEAR TECHNOLOGY
(MSCFWT)

00211

Term-End Examination

June, 2014

MFW-033 : PRODUCTIVITY AND PRODUCTION AND OPERATION MANAGEMENT

Time : 3 hours *Maximum Marks : 70*

Note : *Answer any* ***seven*** *questions. All questions carry equal marks. Use of calculator is permitted.*

1. There are two industries (A, B), manufacturing two types of shoes. The standard time per piece is 1·5 minutes. The output of the two industries is 300 and 200 respectively per shift of 8 hours.

(a) What is the productivity of each industry per shift of 8 hours ?

(b) What is the production of each industry per week (6 days) on the basis of double shift ? *10*

2. What do you mean by plant layout ? Explain the principles and objectives of an ideal plant layout. *10*

3. What are the requirements of a good product design ? What are the various factors affecting product design ? Explain with suitable examples. *10*

4. A comparison of monthly sales of an expensive item, against the total number of visits made by salesmen during the previous month, yields the following data : Is the correlation of the two variables good enough to enable the number of sales visits, to be adopted as an efficient indicator of future sales ? Justify your answer.

Table 1

Sales (x)	1	3	5	7	11
Visits made (y)	2	4	8	9	10

10

5. (a) Pilot study showed the percentage of occurrence of an activity as 50%. Determine the number of observations for 95% confidence level and an accuracy of ± 2%. *5*

(b) 2500 observations were conducted and it was found that the activity under study occurred 1200 times. Determine the limits of accuracy and limit of errors. *5*

6. A project consists of 8 activities. Precedence relation and activity time are given in the Table 2.

(i) Draw the network diagram.

(ii) Find out the critical path.

(iii) Find out the project duration.

Table 2

Activity	Immediate Predecessor	Activity time (weeks)
P	–	12
Q	–	20
R	–	28
S	R	12
T	P, Q	28
U	T, S	12
V	S	8
W	U, V	8

10

7. These are seven jobs which are to be machined first on Machine-1 and then on Machine-2. Machining times in hours are given below.

Table 3

Jobs / Machines	A	B	C	D	E	F	G
M_1	6	24	30	12	20	22	18
M_2	16	20	20	13	24	2	6

Find the

(i) Optimal sequence.

(ii) Total elapsed time.

(iii) Idle time on Machine-2. *10*

8. What is time study ? Explain the various instruments used in time study activity. *10*

9. What do you understand by work sampling ? Discuss the advantages and limitations of work sampling over time study. *10*

10. Write short notes on any ***five*** of the following : *5×2=10*

(i) Computer Integrated Manufacturing (CIM)

(ii) Program Evaluation and Review Technique (PERT)

(iii) Cellular layout

(iv) Performance Rating

(v) Total Quality Management

(vi) Just in time