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SF-8359

B. E. III (Sem. VI) (Mech.) Examination

May / June – 2011

Industrial Engineering

(New Syllabus)

Time : **3** Hours] [Total Marks : **100**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. E. 3 (Sem. 6)**

Name of the Subject :

☛ **Industrial Engineering (New)**

☛ Subject Code No. : **8 3 5 9** ☛ Section No. (1, 2,.....) : **Nil**

Seat No. :

Student's Signature

1 Answer the followings (any seven) **14**

(i) State the objectives of production, planning and control.

(ii) State the factors affecting scheduling.

(iii) Differentiate between process layout and product layout.

(iv) State the objectives of good plant layout.

(v) Write down limitations of forecasting.

(vi) Define the terms : Performance Rating, Standard time.

(vii) Differentiate between production and productivity.

(viii) List out the uses of work measurement.

(ix) Differentiate between "Method Study" and "Work Measurement".

(x) Which are the basic information required for proper plant layout ?

2 (a) The annual sales of a company are given below : **8**

Year	1980	1981	1982	1983	1984
Sales(Rs.)	50,000	65,000	75,000	52,000	72,000

By the method of Least Square find the tread values for each of the five years. Also determine the annual sales for year 1985.

OR

2 (a) The elemental data on a power hacksaw is as under. **8**
Calculate the work content of each element of the job. Also calculate the standard time for the job if contingency allowance is 2%.

Element	Observed time	Rating	Frequency	Relaxation allowance
Loosen Vice	0.15	80	1	12
Set part length	0.06	100	1	15
Tighten Vice	0.12	100	1	11
Switch on machine	0.05	80	1	11
Unlock arm and set saw to work	0.08	100	1	11
Saw off	8.00	100	1	5
Raise saw into clear	0.10	90	1	15
Switch off machine	0.05	80	1	11
Keep the part aside	0.08	75	1	13
Bar changing time	10.00	80	1/50	13
Change dull saw to sharp saw	6.00	100	1/55	13

(b) Write down short notes (any two) **10**
(i) Work sampling
(ii) Micro-motion study
(iii) "Six lines of attack" to improve the productivity.

3 (a) Describe 'Route sheet' with suitable example. **6**

OR

(a) Define Routing. Explain the routing procedure. **6**
(b) Write a short note on "P.M.T.S" (Predetermined motion time and system) **6**
(c) Explain "String Diagram". **6**

4 Answer the following questions : **14**
(a) Define Job Evaluation.
(b) What do you mean by Merit rating method of job evaluation ?
(c) Explain in brief Industrial Electricity Act.
(d) What do you mean by Employee's state insurance Act ? List out the benefit.
(e) What are the four factor of Enterprise ? Explain in brief about capital.
(f) What do you mean by quality circle ? Explain in brief.
(g) What is the difference between Common cause and assignable cause of variation ? Explain by taking suitable example.
(h) Briefly explain ISO 9001 and 14001.

5 Write the short note on following : (any **three**) **18**

(a) Factor Influencing Entrepreneurship

(b) Employee Provident Fund Scheme 1952

(c) Acceptance sampling

(d) Job evaluation methods

6 Answer the following question : (any **two**) **18**

(a) What do you mean by Industrial finance ? Explain in brief the various sources from where industry can fulfill their financial requirement.

(b) In an automatic filling, 175 gm of certain chemical is to be packed in certain container. The permissible variation is +-5 gms. To investigate capacity of process, sample of 5 each were drawn from 10 successive batches and data were recorded as given below :

Batch	1	2	3	4	5	6	7	8	9	10
Mean	177	177	176	176	174	177	175	176	176	174
Range	3	5	3	8	2	8	5	7	3	2

Assume the process to be within control, establish the capability of the process and compare it with the stipulated specification. Take d2 = 2.326.

(c) Explain in detail Factor comparison method of job evaluation. Explain it with suitable example.