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SEAT No. :

P19

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APR-17/BE/Insem.-20
B.E. (Mechanical Engineering)
INDUSTRIAL ENGINEERING
(2012 Pattern) (Elective - III(C)) (Semester - II)

*Time : 1 Hour]**[Max. Marks : 30**Instructions to the candidates :*

- 1) Answer Q1. or Q2, Q3 or Q4, Q5 or Q6.
- 2) Figures to the right indicate full marks.
- 3) Assume suitable data if necessary.

- Q1)** a) Define span of control and delegation of authority. [4]
 b) Define term: productivity and factors affecting productivity. [6]
 OR
- Q2)** a) Write short note on : Craig Harris Model. [4]
 b) Explain Line Organization, line and staff organization and Matrix organization. [6]
- Q3)** a) Explain with example, method study symbols for recording facts. [6]
 b) Write short note on : SIMO chart. [4]
 OR
- Q4)** a) Write short note on 'Multiple Activity Chart' [6]
 b) Differentiate between time study and work sampling. [4]
- Q5)** a) Explain following terms - predetermined motion time standards. [5]
 b) Following are the element times of a machining operation. The corresponding rating and relaxation allowances are given in table as below. [5]

Element	Observed Time (Min)	Performance Rating	Relaxation Allowance(%)
1	0.15	80	13
2	0.05	85	13
3	0.55	90	10
4	1.00	95	12
5	0.1	90	13

Calculate normal time, standard time for this job assuming contingency allowance of 3% of normal time.

P.T.O.

OR

Q6) a) What is allowance? Explain different types of allowances with example.[6]

b) A work-study sample of a manufacturing activity conducted over a 40-hour period shows that a worker with an 85% rating produced 12 parts. The worker's idle time was 10% and the allowance factor was 12% [4]

Find the normal and standard time for this activity.



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