

Roll No

ME-6001 (CBGS)**B.E. VI Semester**

Examination, May 2018

Choice Based Grading System (CBGS)**Industrial Engineering***Time : Three Hours**Maximum Marks : 70*

- Note:** i) Answer any five questions,
ii) All questions carry equal marks.

1. a) Write down importance of PPC in an organisation? 7
b) Discuss various types of production. 7
2. a) What is difference between PERT and CPM? 4
b) Give the following: 10

Activity	Immediate predecessor	Duration in days
A	-	9
B	-	20
C	-	10
D	A	11
E	C	10
F	B, C	4
G	F	2
H	D, F	5
I	E, F, K	18
J	G, H	14
K	-	24
L	K	6

Find out the critical path and project time.

3. a) What are Inventories? Discuss various Cost associated with inventory. 7
b) What is EOQ? Derive an expression for the EOQ when the stock replacement is instantaneous giving the assumption made? 7

4. a) What is meant by the Process capability? How it can be determined? 7
b) The following are the \bar{X} and R values of 4 sub groups of readings:

$$\bar{X} = 10.2, 12.1, 10.8 \text{ and } 10.9$$

$$R = 1.1, 1.3, 0.9 \text{ and } 0.8$$

The specification limits for the components are 10.7 ± 0.2 . Establish the control limits for \bar{X} and R chart. Will the product able to meet its specification? [Given when $n = 4$, then $A_2 = 0.58$, $D_4 = 2.11$, $D_3 = 0.00$]. 7

5. a) Explain the steps involved in point rating method of job evaluation? 7
b) "Work study is a tool to enhance productivity". Comment on this sentence. 7
6. a) What are principles of Motion economy? 7
b) Draw a SIMO chart for sign on a paper. 7

7. a) The elemental times (in minutes) for 4 cycles of a operation using a stop watch are presented below. 7

Elements	Cycle times in minutes			
	1	2	3	4
1	1.5	1.5	1.3	1.4
2	2.6	2.7	2.4	2.6
3	3.3	3.2	3.4	3.4
4	1.2	1.2	1.1	1.2
5	0.51	0.51	0.52	0.49

Calculate standard time for the operation if:

- Elements 2 and 4 are machine elements
 - For other elements; the operator is rated at 110%
 - Total allowances are 15% of the normal time.
- b) What is Plant location? Discuss the various factor affecting the site selection. rgpvonline.com 7
8. Write down short notes on any four of the following.

$$4 \times 3.5 = 14$$

- Belt conveyor
- Overhead cranes
- Work sampling
- Employee PF scheme
- Man machine chart
