Roll No: | | | | | | | | | | | | |

BTECH
(SEM V) THEORY EXAMINATION 2024-25
INDUSTRIAL ENGINEERING

TIME: 3 HRS   **M.MARKS: 70**

Note: Attempt all Sections. In case of any missing data; choose suitably.

SECTION A

1. **Attempt *all* questions in brief.**   **2 x 07 = 14**

Q no.	Question	CO	Level
a.	What is Productivity?	1	K2
b.	Write any four symptoms of a bad plant layout.	1	K3
c.	Does forecasting affects by period of prediction. Justify your answer with suitable examples.	2	K3
d.	What is Ergonomics?	3	K3
e.	What is transportation model and where it is used?	3	K4
f.	Why is simulation needed?	4	K4
g.	What do you mean by Assignment?	5	K4

SECTION B

2. **Attempt any *three* of the following:**   **07 x 3 = 21**

a.	Write any four symptoms of a bad plant layout.	1	K2
b.	Explain Group Technology. Compare the typical process layout with GT layout with suitable example.	2	K2
c.	"Proper selection of material handling equipment is a must." Why? Explain the different principles of selecting material handling equipment.	3	K2
d.	Why do you need Production Planning and Control?	2	K2
e.	Explain the concept of JIT. How does it help the manufacturing system to improve productivity?	4	K3

SECTION C

3. **Attempt any *one* part of the following:**   **07 x 1 = 07**

a.	Explain & overview about the Taylor's scientific management & Gilbert's contribution.	1	K3
b.	Explain how with the help of ergonomic concepts motion economy can be ensured in designing a work – place – layout.	1	K3

4. **Attempt any *one* part of the following:**   **07 x 1 = 07**

a.	What is transportation model and where it is used.	2	K4
b.	How do you know the problem is unbalanced in the case of transportation problems?	2	K4

5. **Attempt any *one* part of the following:**   **07 x 1 = 07**

a.	What is material requirements planning (MRP)? Discuss its structure in detail. Also describe JIT manufacturing system.	3	K3
b.	Explain the terms: (i) Group Technology and (ii) Process Planning.	3	K2

6. **Attempt any *one* part of the following:**   **07 x 1 = 07**

a.	Explain the importance of "ABC" analysis in the problem of inventory control of an organization using a large number of items.	4	K3

Roll No:

BTECH
(SEM V) THEORY EXAMINATION 2024-25
INDUSTRIAL ENGINEERING

TIME: 3 HRS   **M.MARKS: 70**

b.	At a garage, car owners arrive at the rate of 6 per hour and are served at the rate of 8 per hour. It is assumed that the arrival follows Poison's distribution and the service pattern is exponentially distributed. Determine (a) Average queue length, (b) Average Waiting Time.	4	K3

7.   **Attempt any *one* part of the following:**   **07 x 1 = 07**

a.	Optimize the below transportation problem using Vogel's approximation and MODI method.	5	K4

	Warehouse			
Factory	**D**	**E**	**F**	**G**
A	42	48	38	37
B	40	49	52	51
C	39	38	40	43
Requirement	80	90	110	220

b.	The characteristics of a project schedule are given below : Construct a suitable network	5	K3

S.NO	Activity	Time	S.NO	Activity
1	1-2	6	2	1-3
3	2-4	1	4	3-4
5	3-5	5	6	4-7
7	5-6	8	8	6-8
9	8-7	2	10	7-9
11	8-9	1		