

				Sub	ject	Coc	de: Ì	KMI	E <b>503</b>	,
Roll No:										١

## BTECH (SEM V) THEORY EXAMINATION 2023-24 INDUSTRIAL ENGINEERING

TIME: 3 HRS M.MARKS: 100

**Notes: 1.** Attempt all sections. if require any missing data; then choose suitably **SECTION A** 

1. Attempt all 2x10=20

a.	Define Productivity and how productivity is measured.
b.	Explain the terms in brief. (i) Group Technology and (ii) Process Planning
c.	How is forecasting different from prediction?
d.	Explain the terms: (i) Crashing and (ii) Dummy Activity
e.	What is the breakeven point?
f.	Explain the term "depreciation".
g.	What is motion study?
h.	What is the purpose of work sampling?
i.	Why is simulation needed?
j.	What do you mean by Assignment?

#### **SECTION B**

### 2. Attempt any 03 parts of the following:

10x3 = 30

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a.	Define Productivity. Explain different types of production systems with appropriate
	examples.
b.	Why do you need production planning and control?
c.	Explain the importance of 'ABC' analysis in the problem of inventory control of an
	organization using a large number of items
d.	Explain and overview about the Taylor's scientific management and Gilbert's contribution.
e.	How do you know the problem is unbalanced in the case of transportation problems?

#### **SECTION C**

# 3. Attempt any 01 part of the following:

10x1=10

(a)	A company is manufacturing 24000 components per month by employing 100 workers in 8-
	hour shifts for 30 days. The company gets additional orders from the government to supply
	additional 6000 components. The management decides to employ additional workers to fulfill
	the demand on time: (i) 20 (ii) 25 (iii) 30
	Compare all the above three conditions and give your statement in terms of productivity
	achieved after additional workers 20, 25, 30.
(b)	"Proper selection of material handling equipment is a must." Why? Explain the different
	principles of selecting material handling equipment.

### 4. Attempt any 01 part of the following:

10x1=10

- (a) Explain the concept of JIT. How does it help the manufacturing system to improve productivity?
- (b) A small engineering project consists of six activities. The three-time estimates in the number of days for each activity are given below.

Activity	t <sub>o</sub>	t <sub>m</sub>	t <sub>p</sub>
1-2	2	5	8
2-3	1	1	1



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Ider   5. At   (a)   (b)   (b)   (Exp wor   7. At   (a)   So	(a) Calculate the each activity. (b) Draw a netwo (c) Calculate ES (d) Calculate the entify the critical parttempt any 01 par	ork diagram and man T and LFT and mark total slack for each ath and mark on the rt of the following: is managed by a sin to provide service in waiting time of a caviors affect a queue analysis and explain rt of the following:	network diagram.  ngle worker. Customer is exponentially distrib customer, needing a re e? n their importance in m	diagram.  1  rs arrive at the rate outed with a mean epair facility in the naterials management.	0x1=10 e of 30 per hou of 100 second e queue. How of
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7. At			concepts motion econ-		zed to improv
a) So	ork-place-layout.	1 641 641			0 1 10
	Attempt any 01 pai	rt of the following:		, , , , ,	0x1=10
1.) T.	Minimize Z Subject to x- x	Z = 3x + 2y	the simplex method.	5:20	
b) <u>T</u> 1	Transportation Cost	t in Rs.			
		X	Y	Z	Supply
		-	4	3	100
	Vendor A	5	/		
	Vendor A Vendor B	8	4	3	300
			7	5	300 300