Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

EIGHTH SEMESTER B.TECH DEGREE EXAMINATION(S), OCTOBER 2019

Course Code: ME404

Course Name: INDUSTRIAL ENGINEERING

Max. Marks: 100 Duration: 3 Hours

PART A

Answer any three full questions, each carries 10 marks. Marks

1	a)	What are the human factors to be considered while designing a new product? Explain with an example.	(3)
	b)	What is the importance of 'standardization' and 'simplification' in product development and design?	(4)
	c)	Explain the use of prototype in product development.	(3)
2	a)	What are the functions of Industrial Engineering?	(3)
	b)	Describe the procedure followed while designing a product.	(3)
	c)	A company manufactures ball-point pens that can be sold at Rs. 15 per piece. Variable cost of the pen is Rs. 10 per unit. If the company has made a total investment in fixed cost to the tune of Rs. 30000, what is the beak-even sale for the pen?	(4)
3	a)	Describe different types of plant layouts with sketch. Which type of layout should be used for a cotton mill? Why?	(4)
	b)	Describe the factors to be considered in the design of material handling system.	(3)
	c)	How depreciation is considered in replacement problems?	(3)
4	a)	What are the criteria for the choice of a type of material handling equipment?	(3)
	b)	Explain MAPI method.	(3)
	c)	What is break down maintenance? What are its limitations?	(4)

PART B

Answer any three full questions, each carries 10 marks.

5	a)	Discuss the objectives of method study	(3)
	b)	Explain Operation Process Chart	(3)
	c)	Write short note on SIMO Chart,Cronocycle graph and cycle graph	(4)
6	a)	Objectives of job evaluation and merit rating and different merit rating method	(4)
	b)	List out various performance rating method	(3)
	c)	Factors involved in selection of job in any industry	(3)
7	a)	Discuss significance of industrial relations in business environment	(4)
	b)	Causes and effects of industrial disputes and how it can be eliminated	(3)

	c)	Method of elimination of fatigue and its effect in industry	(3)
8	a)	Types of communication in industry and how it affect productivity	(2)
	b)	Need for Workers participation in management Various forms of workers participation in management	(4)
	c)	Characteristics of collective bargaining and explain safety programme and safety committee	(4)

PART C

Answer any four full questions, each carries 10 marks.

9	a)	What are the major functions of Production planning and control?	(3)
	b)	With the help of a neat diagram illustrate the PLC concept. Comment on each phases of the PLC.	(4)
	c)	What are the various production systems? How they are classified?	(3)
10	a)	With the help of a neat diagram explain the cellular manufacturing system.	(3)
	b)	Differentiate between aggregate planning and master scheduling.?	(4)
	c)	Derive the basic EOQ model and list the various assumptions on which it works.	(3)
11	a)	How inventories are classified and costs associated by inventories?	(3)
	b)	A manufacturer has to supply 10,000 units of product annually. The unit cost is Rs. 2 and it costs Rs.36 to place an order. The inventory carrying cost is estimated at 9% of average inventory investment. Determine 1. EOQ 2.Optimum number of orders to be placed per annum. 3.Minimum total cost of inventory	(4)
	c)	List out the major selective inventory control techniques and give a detailed description of any one technique.	(3)
12	a)	Differentiate between 100% inspection and sampling with suitable examples.	(3)
	b)	What are the applications of control charts?	(3)
	c)	What are the components of process capability? Write short notes on any two indices used to measure the same.	(4)
13	a)	State the advantages of using statistical methods for quality control?	(3)
	b)	Define the term reliability. What are the different configurations related to system reliability? Give a detailed description of any two with the help of an example.	(4)
	(c)	With proper illustration explain the how Gantt charts are employed tracking the progress of activities in an industry?	(3)
14	a)	Explain the various dimensions of TQM and Six Sigma concept.	(4)
	b)	Give an account of the major features of ISO9000 quality system.	(3)
	c)	Describe the concept of quality circle. What are its objectives and benefits?	(3)

****