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AHSANULLAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

Department : Mechanical and Production Engineering
Program : B.Sc. in Computer Science and Engineering
Semester Final Examination, Spring 2017
Year : 4th **Semester : 1st**
Course No : IPE 4111 **Course Name: Industrial Management**
Time: 3 (three) hours **Full Marks: 70**

Use separate answer script for each section

Section A

Instructions: i) There are 4 (FOUR) Questions. Answer any 3 (THREE) Questions
ii) Marks allotted are indicated in margin
iii) Assume any reasonable data if needed

Question 1. [$11\frac{2}{3}$ Marks]

a) Some companies prefer to earn profit through sales volume while some companies prefer to do so through customer satisfaction. Explain both type of companies' orientation to the market. Give relevant examples. **(4)**

b) You are going to start a new restaurant. You have already selected the market segment that you are willing to serve. But you know that your market offerings must be flexible. What are you going to offer to your customers so that you can fulfill everyone's need? Discuss according to flexible market offerings. **(4)**

c) What are the criteria for choosing a brand element? **($3\frac{2}{3}$)**

Question 2. [$11\frac{2}{3}$ Marks]

a) Walter H. White is a chemistry genius, but works as a chemistry teacher in an Albequerque, New Mexico high school. His life drastically changes when he's diagnosed with stage III terminal lung cancer, and given a short amount of time left to live: a mere matter of months. To ensure his handicapped son and his pregnant wife have a financial future, Walt uses his chemistry background to create and sell the world's finest beverage. To sell his signature "Blue Cola," he teams up with Jesse Pinkman, a former student of his. The new beverage makes them very rich very quickly, but it attracts the attention of other prominent companies. Other companies **(6)**

are also trying to manufacture similar products and take away the market share from Walter H. White.

As a market leader Walter wants to expand the total market. Suppose you are the financial advisor of Walter, suggest him some possible ways to expand the total market of the beverage "Blue Cola".

b) Differentiate value and offerings with examples. **(2)**

c) Explain the local marketing concept with an example. What are the pros and cons of local marketing? **($3\frac{2}{3}$)**

Question 3. [$11\frac{2}{3}$ Marks]

a) Differentiate invention and innovation with examples. Draw the innovation cycle. **($2\frac{2}{3}$)**

b) Explain the S-curve of technological progress. **(2)**

c) Discuss the cost of quality with relevant examples. **(4)**

d) In a metal showpiece manufacturing plant, cost of rework is \$2. Process specification is: 8.5 ± 0.05 units. It was found that the production process mean was = 8.492 and standard deviation was = 0.016. Find out the loss due to quality deviation of the manufacturing process. **(3)**

Question 4. [$11\frac{2}{3}$ Marks]

a) Cersei assumed the throne of the seven kingdoms under the name of Cersei of the House Lannister, the first of her name, queen of the Andals and the First Men, protector of the Seven Kingdoms. She was a poor ruler in the past. This time she is planning to gain the trust and allegiance of her countrymen by undertaking various projects for the well-being of her people. But the financial condition of her country was not very well as the gold mines were dried up. So the queen sought help from the most powerful financial institution, the Iron Bank of Braavos. The bank authority reached an accord with the queen and they agreed upon 10% annual interest rate on the borrowed money. There are two proposed projects here, project A and project Z. Suppose you are the hand of the queen. You are in charge of selecting the best project. Which project should be selected on the basis of (a) NPV method and (b) IRR method? The associated cash flow is given below- **(6)**

Year (t)	CASH FLOWS, CF_t Project A	Project Z
0	-$1000	-$1000
1	500	100
2	400	300
3	300	400
4	100	675

b) A new restaurant is being opened. The associated fixed cost is $120 per day. The restaurant will be open for 26 days in a month. They restaurant offers 5 types of products which are given below along with the price and cost of each products. Compute of the daily sales amount of each product to reach the breakeven point. $(5\frac{2}{3})$

Item	Price	Cost	Annual Forecasted Sales Units
Sandwich	$2.95	$1.25	7000
Soft drinks	0.80	0.30	7000
Baked potato	1.55	0.47	5000
Tea	0.75	0.25	5000
Salad	2.85	1.00	3000

Section B

Instructions: i) There are 4 (FOUR) Questions. Answer any 3 (THREE) Questions.
ii) Assume any reasonable data if needed.

Question 5. [$11\frac{2}{3}$ marks]

a) What are the major approaches to management? Write down Fayol's 14 Principles of management. **(4)**

b) According to the H. Mintzberg, what roles do managers play in an organization? Discuss with suitable examples. **($3\frac{2}{3}$)**

c) What are the six key elements of Organizational design? Write down the difference between Traditional and Contemporary Organizational design. **(4)**

Question 6. [$11\frac{2}{3}$ marks]

a) Write a short note on Maslow's hierarchy of need theory. Give a practical example of Maslow's hierarchy of need theory. **(3)**

b) Mention the relative advantages and disadvantages of different performance appraisal methods. **($4\frac{2}{3}$)**

c) A multinational technology firm uses 48,000 processors per year for its popular notebook series. The firm makes its own processors which it can produce at a rate of 800 per day. The notebooks are assembled uniformly over the entire year. Carrying cost is $ 1 per processor. Setup cost for a production run of processors is $45. The firm operates 240 days per year. Determine the following: **(4)**

(i) Optimal run size

(ii) The length (in days) of a run

(iii) Minimum total annual cost for carrying and setup

(iv) The amount (in dollar), the company could save annually if the setup cost reduced to $25 per run

Question 7. [$11\frac{2}{3}$ marks]

a) What is ERP? Draw the flowchart of MRP II. **(3)**

b) Write short note. **(Any two)** **(3)**

i. Task Force
ii. Bounded Rationality
iii. Span of Control

c) Why Aggregate Planning is called "rolling planning horizon"? **(2)**

d) Suppose, you own a software firm. You want to motivate your employees. Which theory will you follow from McGregor's Theory X and Theory Y? Explain the logic behind your selection. **($3\frac{2}{3}$)**

Question 8. [$11\frac{2}{3}$ marks]

a) What is budget and budgetary control? Differentiate between Zero based budgeting and Incremental budgeting. **($3\frac{2}{3}$)**

b) For a seasonal product which type of forecasting approach should be followed and why? Discuss the steps of Delphi method. **(3)**

c) *The sales report of a Cement Company is given below:* **(5)**

Month	Actual Sales (in thousand $)
January' 17	20
February'17	21
March'17	15
April'17	14
May'17	13
June'17	16

22
21·2
18·66 18·672
16·66 16·8032
14 15·28192

i. If the forecast for January'17 was 22. Prepare a forecast for July'17 using each of these methods:
   a. A three-period moving average.
   b. Simple exponential smoothing with a smoothing constant of 0.40.

ii. Calculate the MAD for both the methods used in the above question (i) for last three months (April'17, May'17 and June'17). Which method will be more suitable and why?