

MANAGEMENT (PAPER-II) 2009

Section A

Q1. Attempt any three of the following questions:

(a) A regimen consisting of a daily dose of vitamin C was tested to determine its effectiveness in preventing the common cold. Ten people who were following the prescribed regimen were observed for a period of one year. Eight survived the winter without a cold. Suppose the probability of surviving the winter without cold is 0.5 when vitamin C regimen is not followed. What is the probability of observing eight or more survivors given that the regimen is ineffective in increasing resistance to cold.

(b) Discuss the managerial utility of the sensitivity analysis in linear programming.

(c) Assuming a linear regression model of the type

$$Y_i = a + b X_i + U_i, \quad \text{Where } i = 1, 2, \dots, 29$$

$$\sum X_i^2 = 100, \sum X_i'Y_i' = 72, \sum X_i = 2610, \sum Y_i = 1740$$

where X_i' and Y_i' are deviations from X_i and Y_i from their respective sample means.

What is the least square estimate of a and b?

(d) The following table gives the number of aircraft accidents that occurs during the various days of the week. Find whether the accidents are uniformly distributed over the week.

Days	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
No of Accidents	14	16	8	12	11	9	14

(Given: the value of chi-square significant at 5, 6, 7 d.f. are respectively 11.07, 12.59, 14.07 at 5% level of significance.

Q2. Explain the difference between the product moment correlation coefficient and rank correlation coefficient.

The rankings of ten students in two subjects A and B are as follows:

A	3	5	8	4	7	10	2	1	6	9
B	6	4	9	8	1	2	3	10	5	7

Find the correlation coefficient and comment on the result.

Q3. A small firm makes three similar products, which all follow the same three-step process, consisting of milling, inspection and drilling. Product A requires 12 minutes of milling, 5 minutes for inspection, and 10 minutes of drilling per unit; product B requires 10 minutes of milling, 4 minutes of inspection and 8 minutes of drilling per unit; product C requires 8 minutes of milling, 4 minutes for inspection and 16 minutes of drilling. The department has 20 hours available

during next period for milling, 15 hours for inspection and 24 hours for drilling. Product A contributes Rs. 2.40 per unit to profit, product B contributes Rs. 2.50 per unit, and product C contributes 3.00 per unit. Determine the optimal mix of products in terms of maximizing contribution to profits for the period.

4. Discuss in detail the different supply chain strategies. What is an appropriate supply chain design for a competitive environment?

Section B

Q5. A. B. Motors (ABM) is one of the oldest multinational corporations in the world. Founded in 1910, ABM established its first international operation in the 1920s. Historically most of the ABM's foreign operations have been concentrated Western Europe. Although ABM has had a long presence in Latin America and Asia until recently, sales there accounted for only a small fraction of the company's total international business. Acknowledging the fact that Asia, Latin America and Eastern Europe will be the automobile industry's growth markets. ABM decided to have a new look at its international business strategy in 2009.

Traditionally, ABM would consider the developing world as a dumping ground for it old, outdated and obsolete technology. The production would be decentralised. North American and West European factories would produce the latest, state of the art vehicles while the plants in developing countries would produce old and discarded models. The operations would not be centrally controlled from its headquarter and subsidiaries in different countries would produce vehicles as per their specific requirements. Thus there would be two sets of ABM vehicles plying in the world at any given time- old, outdated and discarded models in developing world and new, state of the art models (with multiple variants of each one of them) in Eastern Europe and North America.

Despite being one of the oldest players in international business, numerous problems can still be seen on ABM's horizon. Compared to Toyota, who is fast becoming world's largest automobile manufacturer, ABM suffers from high costs, low perceived quality (especially in developing countries) and a profusion of brands. Toyota and other Japanese vehicle manufacturers are fast spreading their wings with low-cost and high fuel economy vehicles in developing world.

There is one group in ABM who strongly feels that the time has come for ABM to change its strategy and to produce 'global cars' while the other group feels that ABM should produce country- specific models to attract local customers.

Answer any three of the following questions:

(a) How would you characterize the international strategy pursued by ABM in the (i) developing world and (ii) Europe prior to 2009?

(b) What would be your advice to ABM regarding the international strategy it is planning?

(c) How should ABM compete with Japanese car manufacturers globally?

(d) What should ABM do (i) produce global cars or (ii) produce local country-specific models? Justify your answer.

Q6. Governments can influence firm's decisions to invest in foreign countries. By their choice of policies both host country and home-country governments encourage and restrict Foreign Direct Investment (FDI). An important determinant of government policy towards FDI is political ideology. Political ideology ranges from a radical stance that is hostile to FDI to a noninterventionist, free market stance - between the two extremes is an approach best described as pragmatic nationalism. Explain how the political ideology of a host government might influence the negotiations between the host government and a foreign multinational enterprise (MNE). Under what circumstances is an MNE in a powerful negotiating position vis-a-vis a host government? What costs does a developing host country pay for FDI?

Q7. Tata Motors was planning to set up a factory to manufacture the "world's cheapest car" in Singur, West Bengal. However, due to the steep resistance of local people they had to shift the plant location to Gujarat.

Explain how each of the following resources within the company might influence its overall strategy. (Any three):

- (a) Plant location
- (b) Company image
- (c) Financial resources
- (d) Human Resource Planning

8. Air India, the national carrier has recently approached the government to bail it out by sanctioning an amount of Rs. 15,000 crores. Ministry of Civil Aviation has appointed you as the Chairman and Managing Director of Air India. You need to submit a detailed plan of revival Air India in next three years. Your strategic consultant tells you that you may consider any of the four planning models (namely, strategic business Unit, The Boston Consulting Group Matrix, The General Electric Business Screen and Porter's Generic Strategies Model).

- (a) Describe the four strategic planning models briefly.
- (b) Which of these four strategic models would you find most useful for Air India and why?
- (c) Based on the model selected, outline a brief plan for revival of Air India.