SECTION-I : ANALYSIS OF BUSINESS SITUATIONS

Directions : This section comprises two passages. *After each passage questions consisting of items relating to the preceding passage are given. Evaluate each items separately in terms of the respective passage and choose your answer as per the following guidelines.*

(A) *If the item is a MAJOR OBJECTIVE in making the decision; that is, the outcome or result sought by the decision maker.*

(B) *If the item is a MAJOR FACTOR in arriving at the decision; that is consideration, explicitly mentioned in the passage that is basic in determining the decision.*

(C) *If the item is a MINOR FACTOR in making the decisions; a less important element bearing on or affecting a Major Factor, rather than a Major Objective directly*

(D) *If the item is a MAJOR ASSUMPTION made deliberately; that is a supposition or projection made by the decision maker before considering the factors and alternatives.*

(E) *If the item is an UNIMPORTANT ISSUE in getting to the point; that is a factor that is insignificant or not immediately relevant to the situation.*

PASSAGE - I

Laxman was beginning to wonder what had made him give up a smoothly running job in New Delhi to tackle what had turned out to be a baffling problem in Bangalore. If he had stayed with his company he might have had a seat on the board within two years.

Then an uncle in Bangalore had written to him imploring him to come and run his printing plant, which produced transfer design and other specialized printing, some of it for export.

Laxman was 28 years old, unmarried and ambitious. The offer had appealed to him in several ways.

First there was the chance to be his own boss immediately. Second, there was the challenge, as he saw it, of bringing U.S. know-know to the firm. Third, there was the satisfaction of returning as a man of some authority to the Delhi where his father lived.

He was a believer in scientific management. He also believed that people everywhere are basically alike and will respond in about the same way to the carrot of cash rewards and the stick of firm leadership.

After only a few months in Bangalore, he knew differently. His uncle had set up the plant five years ago with the active encouragement of the Karnataka government. But the 300 strong labour force still have no loyalty to the company from the distant north. The workers dreamed of orange groves rather than production targets.

Indeed, on one occasion he had found a worker blissfully cleaning equipment form one of the printing machines in an orange grove near the plant. When he had ordered him back into the plant the man had looked astonished and replied "Why should I, work inside when I can do my job here?

Productivity was very low, when Laxman visited a local barber, who knew that he worked in the printing press plant but did not know he was the boss, the man had said: "Sir, can you get me a job with the printing company so that I no longer have to work?" As he walked around the plant he saw a workforce that yearned to be out in the sun, and wondered how he could get his employees to changes their attitudes. First, he tried using his personal appeal. That did not work. He would have been more successful, he ruefully admitted to himself, had he been born in Bangalore.

He instituted production committees, which were supposed to generate their own ideas on improving productivity. He worked on them very hard but they too were a dismal failure.

When managers sat on the committees, the workers seemed struck dumb, failing to produce constructive ideas. Then, when he gave the committee more autonomy to run is own affairs, the members used the time allocated for meeting to leave the factory and take a siesta outside.

He decided that a bonus system relating pay directly to output was the only solution. At first the union opposed this, saying it was the kind of piecework they had been fighting against. Then, to his surprise, they gave in. He thought he had won.

If so, the victory was a hollow one. The workers began demanding the bonus as a right, whether or not they had worked extra hours or produced more. When he refused to pay, the workers went on strike. He felt that he was dealing with forces beyond his control, with people whom he could not fully understand.

"They just don't seem to want to participate," he wrote to a friend in New Delhi. "If you give them the chance to run their own affairs, they take advantage of it. If you offer them a carrot, they eat half of your arm as well. And if you wave a stick, they strike."

His friend replied that he should investigate the possibility of instituting a system of co-determination management. Co-determination management gives workers a part in making decisions within the firm in areas that are traditionally the prerogative of management. What the system amounts to - in practical terms is that it allows workers to have some managerial authority in deciding corporate policy, and in some cases, objectives. Once a decisions is made in principle to institute such a system, the next step is to work out just how much authority management is willing to share with the workers and in what policy areas. Laxman decided to give to determination a try as a last resort. Rather than ideate specific areas in which to implement co-determination he felt that it would be best to consult workers committees and then make a joint decision. At first the workers expressed some interest in the plan but when they asked him to explain how the system would add to their pay he was taken aback. He tried to explain to the workers that they would gain decision - making authority not only on the plant floor but in policy - making. He further explained that they would have some power to influence, for example, whether profits should be reinvested in the company, or distributed to shareholders. In reply the workers representatives said that they had no interest in having responsibility for managerial decisions because they had enough problems of their own. With that response, he realized that his co-determination scheme had no chance of being accepted by the workers.

He seemed to have reached a dead end. He could advise his uncle to concentrate production in New Delhi and get rid of the other plant. But then he would have to return to the New Delhi without a job and with a feeling of defeat. Alternatively he could find a way of motivating his workers. But how, he asked himself for the thousandth time.

1. Location of company headquarters in Bangalore.

2. Basic similarity of the motivations of people every where.

3. Laxman's chance to be his own boss.

4. Degree of worker's loyalty to the company.

5. Usefulness of cash rewards in motivating employees.

6. Desire of workers to run their own affairs

7. Quality of machines used in the factory.

8. Proximity of orange groves to the plant.

9. Laxman's high degree of personal ambition.

10. Power of the union to influence worker's attitudes and behaviour.

PASSAGE - II

The Bajaj electricals manufactured electrical appliances distributed through sixty wholesales, many of which were company-owned. Retailers carried competitive lines, but wholesalers did not; portable appliance moved to market through nonexclusive distributors.

The company depended on wholesalers to provided service either directly or through supervision of retailers service departments. When the warranty was involved, the manufacturer supplied the parts and the wholesale the labour Retailers who performed the service function were given a larger discount than those who returned the goods to the wholesaler to fulfill the guarantee.

In 2000, officials began questioning the adequacy of the service thus rendered either under the terms of the warranty of independently. Typical retailers carried several brands and, in general, did not have competent service personnel. The result was that the blame of the defect was passed back to the manufacturer. This said, the sales manager, was a major consideration. Others believed that reduction of service costs would follow from centralising the entire operation in the hands of a relatively few factory service branches or in carefully trained service personnel employed by a relatively few widely distributed wholesalers. Costs would be thus reduced, and at the same time, the quality of service rendered would be enhanced, it was claimed.

The product service managers argued that more money should be spend on training retail sales service personnel. Retailers like to render service, he claimed, since it helps to bring traffic into their stores and thus is profitable. A third possibility explored was the promotion of good service by concerns who service but do into sell appliances.

During the conference, the rise of discount house was discuss. It was thought to be a phenomenon party based on the realization that good independent service can be secured in most markets and for most appliances. There may be an exception in the case of TV sets, it was admitted, since it is common to find great resentment as to quality of service and delaying meeting calls.

The subsequent discussion raised questions as to the validity of the policy of requiring the retailer to give free service time under the terms of the guarantee. Often owners expected to receives this service free, even though they had brought the appliance elsewhere. Some company officials believed that the company should pay dealers for their time costs when they enabled the company to market good on its guarantee, One executive pointed out, during a heated discussion on this point, that at least one major automobile company now paid its dealers for making repairs under the warranty.

About this time the sales manager read about a consumer survey that found that the average owner gave little thought to service availability when buying an appliance, except perhaps in the case of TV sets. But, when trouble arose the owner expected the maker to "stand behind his product" and not fall back on any excuse as to costs or time involved limitations which are found in the normal warranty.

Bajaj's operations manager was given the responsibility to set up a task force which would study each of the alternatives discussed during the conference. The alternatives were to be examined with regard to customer service and cost. The task forced was asked to make its recommendations directly to the service manager.

Two of the alternative methods to increase service were almost immediately discarded as impractical. It was found that retail sales personnel would not have adequate time to devote to servicing appliances. Investing capital in concerns which service but do not sell appliances might increase the level of service, but Bajaj would have little if any control over their operation. These concerns were independently owned and had no more allegiance to Bajaj than they did to any number of manufactures whose appliances they serviced. Some concerns were highly reliable, but others had a record of spotty service. Weighed against other available alternatives, these options had few benefits to Bajaj It was the conclusion of the operations group that a choice had to be made among three options : (1) factory service branches, (2) wholesaler service department and (3) a combination of both factory and wholesaler service.

The factory service alternative had a number of advantages to Bajaj. Because Bajaj would provide the service at its own locations with company personnel, it could closely supervise the quality of the work done. Factory supervision of service was more difficult whenever the work was done by independent dealers. Moreover, under the factory undergo the most rigorous initial and refresher training programs. Another advantage of centralized by storage was that parts inventories would be minimized by storage in only a few service locations. Finally, under this system, Bajaj would determine the price of service, thereby ensuring that consumers would not be overcharged.

The major disadvantage of centralized factory service was that Bajaj would have to invest in service locations, provide parts inventories, and train personnel. Because of the size of this investment, few locations could be established.

Compared to factory service, wholesaler - operated locations would be more difficult to supervise. As a result, the level of service was found to vary from location to location. Even though the consumer survey indicated that service was not an important consideration in the pre - purchase decision as to whether to buy an appliance, poor service experienced by a customer might lower the chance that a Bajaj appliance would be bought gain.

Wholesaler service would require less investment for Bajaj. Although Bajaj would have to take some of the responsibility for training wholesaler personnel, it would not have to investment and operating costs would not limit the number of service centres as it would in the case of factory service.

Many of the wholesalers would be eager to offer the service as a an added customer benefit. Bajaj's investment would be even smaller if service facilities were maintained by independent non - factory - owned wholesalers.

A final alternatives was combination of both factory service centres and wholesaler-operate service departments. Under this option, wholesalers would be encouraged to offer service whenever possible, while Bajaj would maintain centralized service centres in areas where wholesaler service was inadequate or spotty.

11. Training of retail service personnel.

12. Lack of competent service personnel at most typical retailers.

13. Technical level of service demanded by consumers.

14. Centralisation of the service operation.

15. Increasing the level of service

16. Investment required in service centres under each plan.

17. Consumer pre - purchase decisions.

18. Portable appliances sold by nonexclusive distributors.

19. Cost of parts inventories.

20. Increased in store traffic due to service call.

SECTION - II : READING COMPREHENSION

Directions : Each passage in this section is followed by questions based on its contents. Read the passage carefully and then answer the questions given below them by choosing the best answer to each question. Answer the questions on the basis of what is stated or implied in the passages.

PASSAGE - I

Academics, activities and the average person-in-the-street seem to have joined together in an outery against the role given to women in panchayats. Their participation is increasingly being described a rule by proxy. According to the dictionary, this means one person authorising another to act on his/her

behalf. The term bears insinuations of total passivity on the part of women representatives. Needless to say this is a sweeping statement about the women who have become number of those serving as members and chairpersons of rural councils at various levels is about one million.

Both in the media and elsewhere there is a backlash against women's participation as elected representatives in the panchayat system. The allegation of proxy rules follows from the perception that it is the men who are ruling through their wives who are mere mouthpieces. It is true that women do go get advice and help from the husbands. But does this in itself constitute proxy rule? What about the kitchen cabinets of powerful politicians? What about the close kinship and other networks that leaders here and abroad draw upon for support? Even men politicians function in the context of preterminal systems where the heads of households and clans exercise significant authority over members. Party policies are another example of their responses as representatives being influenced by others. Why is it that no one calls them proxy representatives on these grounds?

Another means of disparaging newly elected women representatives is through mischievous allegations regarding sexual conduct. As we do our inter-State study of women and the panchayat system for the Ministry of Rural Development, we are confronted in case after case with insinuations of women representatives being of loose character. It is alleged but rarely with evidence that they have an improper relationship with some local official or a friend. It is remarkable here, that male political representatives can have multiple wives, keep mistresses and get away with it. But if women elected to some position happens to be articulate and socially mobile and goes about alone, her morality become instantly (even deliberately) suspect. On the other hand if she behaves more acceptably by having her husband accompany her, he is seen as the pati-member or pati-pradhan who has the real power. Clearly, women are caught in a double bind, between the opposite charge of subservience.

None of the many critics seem to notice that it might be the woman representative who is actually helping her husband: that he might be receiving support and benefit because of her political activity, Further, we have evidence of minor but significant shifts in the sexual division of labour, and also of enhancement of family prestige through the involvement of women. These are near invisible yet but their eventual effect on patriarchal society will be drastic.

21. The central point of information given in para one is that women's participation in panchayats:
    (a) has reached impressively high levels
    (b) shows that proxy rule can be implemented successfully in India.
    (c) is being widely criticised today
    (d) carries insinuations of total passivity on the part of electorate.
    (e) has led an outcry against diluting the provisions of the 73rd Amendment.

22. Describing women's role in governance as rule by proxy amounts to saying that:
    (a) rural elections are rigged
    (b) rural elections are still being manipulated through vote banks.
    (c) The male dominated style of politics is being replaced by the women's style.
    (d) husbands rather than the women representatives have the real power.
    (e) women being wives and mothers are better representatives of the people than full time men politicians.

23. In para two, the writer discusses the idea of proxy governance and points out that :
    (a) All elected representatives functions as proxies for the people they represent and whose influence they have
    (b) The influences of party policies, pressures from clan or caste groups which operates on individuals in real politics is no different fromthat of husbands on women representatives.
    (c) It is unfair to call the effective functioning of a group of women representatives a kitchen cabinet since men in politics also from pressure groups or cliques.

(d) The dictionary meaning of proxy does not cover the wide range of indirect controls that actually exist in practical politics.

(e) Most dictionary parties support women's participation in panchayats but they give the highest priority to party policies and discipline.

24. In para three, the main item of information presented is that:

(a) Women in rural politics are widely accused of sexual misconduct.

(b) The breakdown of traditional values has led to immorality among both men and women.

(c) The negative side of women entering politics is that men can be accused of having multiple wives or mistresses.

(d) Articulate and socially mobile urban women are still suspect in rural contexts.

(e) In a majority of cases women representatives have to be accompanied by their husbands when they leave their neighbourhood for political work.

25. The position of the writers regarding the popular attitudes towards women in rural politics is

(a) sympathetic

(b) critical

(c) a balanced consensus position

(d) based on a technical interpretation of the legislation

(e) based on the narrow dictionary meaning of proxy.

26. The writers feel that the role to be played by elected women representatives in such that :

(a) Most positions are being cornered by urbanised and socially mobile women.

(b) Intra - family tensions are more or less unavoidable.

(c) Those who can manipulate the proxy system can get away with immorality.

(d) A certain degree of independence and articulateness is needed to do the job well.

(e) Instant and deliberate action against those who are suspected of immorality is needed though difficult to implement.

27. What observers of women in rural politics do not pay sufficient attention to the position of men is

(a) The extent to which male relatives support women socially.

(b) The increasing rate of trickling down of development funds to intended recipients.

(c) The need for more vigilant participation by women to prevent a few from misusing their position to favour their husbands.

(d) The implications for social structure in the subtle changes in the sexual division of labour.

(e) The possibility that husbands in many cases are actually benefiting from this involvement of wives.

28. The double bind referred to in para 3 arises from the :

(a) Need for women to balance the time and energy needed for public and private affairs.

(b) The conflict between the family role and the political role when husband and wife are both elected members

(c) Criticism that is directed against their independence and against their acting conventionally.

(d) The idealistic desire to be honest and pressure to join the existing web of corruption in politics.

(e) The need to encourage women to participate in politics set against the importance of keeping out persons with low morals.

29. Women's political activity leads to changes in the division of labour, if family prestige etc. These effects:

(a) are only subtle and short term negative features which will disappear soon.

(b) though small are deep rooted and will have a significant impact on society.

(c) are still only subtle tendencies that might not progress for a very long time.

(d) are very like to lead to another round of backlash to protect the position of women.

(e) show that the 73rd Amendment will become truly effective only after a long struggle by women.

30. The word "insinuation' in the passage means
   (a) Implication
   (b) Logical conclusion
   (c) Precondition
   (d) Likely consequence
   (e) Severe criticism

PASSAGE II

A major feature of the global food security scenario is that marked imbalances exist across regions. For instance, in 1985-86 there was a global surplus in cereal production of 92 million metric tons. The developed nations had a surplus of 182 millions tons, while the developing countries and the socialist bloc had a deficit of 90 million tons. The estimated incidence of chronic malnutrition for 1985 was anywhere between 500 and 720 million people. This figure excludes China for want of data. South Asia with about two-thirds after the undernourished and sub-Saharan Africa with one - fifth, account for nearly 80% of the world's total. This highly skewed profile of food insecurity across the major regions of the world show little change over recent years. Any worth while contemporary discussions on food security must therefore, have as its major focus the situation in S. Asia and sub-Saharan Africa.

Alongside the regional differences in levels of food insecurity, within the vulnerable regions the causes of this condition also vary considerably. In certain countries, of which India is an example, the poor are largely net buyers of food. What is needed in this contexts are steps to increase domestic supplies and stabilise prices at reasonable levels. Policies are needed to promote food production to serve the public distribution system. On the otherhand, in countries like Bangladesh, the majority of the poor are in fact net sellers of food, Security for them can be achieved by raising the prices of food grains and expanding markets mainly through increasing exports. An improved marketing system is relevant here. Another source of problems regarding food-security lies in structural factors like lack of infrastructure for transporting foodgrains and their storage. The transport problem is acute in land locked countries like Chad, Mali Niger and Zimbabwe. This had led to considerable damage and wastage, and this includes imported foodgrains.

The problem of food insecurity over the globe has a disturbing long - term aspect, namely the growing imports needs of the developing countries. Over just six years following 1972, their imports rose from around 50 to over 70 million tons. There is also evidence that the annual growth rates for food production are negative for most of the low income countries. Given the food grain prices are likely to increase following he Uruguay Round (UR) of GATT, this growing dependence on non domestic sources points only to a worsening situation. A short - term aspect of food insecurity lies in inter year fluctuations in the availability of food supplies. Many factors operate together. A fall in production cannot be offset readily by imports because of foreign exchanges restrictions and a reduction in food exports is disallowed by existing contracts. The option of curtailing non food imports while logically sound, is problematic because these imports usually cover those items needed for sustaining ongoing development. Thus there is a trade off between current food security and growth and growth. Food aid becomes an important mechanism under these circumstances. Indeed figures show increased food aid over the decade after 1978. A limitation of this mechanism is that aid made available by donars generally does not respond to the specific needs of individual countries targeted.

31. The writer cites the large cereal surplus in developed countries in order to :
   (a) illustrate the extent of exploration in the present world order
   (b) show how efficient modern agricultural practices can be
   (c) show that there will be a world level surplus even after meeting the deficits of poor countries
   (d) highlight the marked imbalances across regions of the world in food security.

(e) argue that this quantum is actually small when compared with the massive figures for malnutrition

(e) infrastructure deficiencies rather than low domestic production is at the base of food insecurity.

32. The important observation made in relation to S. Asia and S. Africa is that :
(a) these regions have the highest levels of individual malnutrition and child morality.
(b) a direct comparison between three regions and China would not be valid without more data
(c) an effective solution to global food insecurity must be linked to their needs.
(d) they must be given priory assistance to reduce their dependence on costly food imports.
(e) their position in the map of malnutrition across major regions remains unusually stable.

33. The significant difference between the group of countries represented by India and Bangladesh lies in :
(a) the urban rural population ratio
(b) the level of dependence on imports for maintaining buffer stocks
(c) the vulnerability of the rural population to the effects of high food prices.
(d) the importance of the rural economy of the functions of trading communities and castes.
(e) the proportion of small and medium farmers who produce some surplus food.

34. Chad and Mali examples of countries where :
(a) transportation facilities can be maintained only with heavy technical and financial outlays.
(b) inadequate transport and storage facilities lead to wastage of food supplies.
(c) lack of infrastructure leads to a dead lock in the food distribution system.
(d) the costs of transport and storage effectively neutralise the value of the significant food aid.

35. The long - term dimension of the food insecurity problem of the poor countries is
(a) the tendency to replay on cheap imports and aid rather than invest in infrastructure.
(b) the likely increase in grain prices following the UR of GATT
(c) the negative growth rate for food supplies that show signs of stabilizing
(d) the need to maintain exports at high levels even when earning are falling.
(e) the increasing dependence on food imports of many developing countries.

36. Conditions such as foreign exchange constraints, limited buffer stocks, fixed grain export levels are factors contributing to :
(a) short term fluctuation in food supply.
(b) a reduction in the level of subsidy for food given through ration outlets.
(c) fluctuations in the quantum of food given through ration outlets.
(d) negative trends in the level of investment for the ongoing development of production capacity
(e) the diversification of safeguards against long terms fluctuations in food supply.

37. The option of reducing non-food imports when short-term food shortages arise is often not practical because :
(a) such imports are necessary to sustain ongoing development effects.
(b) the conventional methods of containing insecuring are too expensive.
(c) there is a trade off between food security and growth of GNP.
(d) curtailing imports arbitrarily goes against the UR agreements.
(e) dumping of surplus supply by the exporting nation so affected can cause even more difficulties.

38. Short - term reductions in food security linked to short fails in production :
    (a) are the result of the unregulated play of market forces.
    (b) often are also the basic cause of long term insecurity
    (c) indicate the need of mechanisms to control the aid flow across UR linked boundaries.
    (d) represent a context in which food aid can play a significant role.
    (e) leads to food aid being used to manipulate the policies of weak countries.

39. While food aid has increased over the 1980s :
    (a) it remains a mechanism that can be misused by wealthy nations.

    (b) it is not usually sensitive to the specific needs of the countries being targeted.
    (c) it has not been effective in controlling price rises after the UR.
    (d) its potentially key role in mediating between food security and food growth has yet to be activated.
    (e) it has not met the needs of the donor countries.

40. The word 'offset' in the context of the passage means:
    (a) compensate for
    (b) distant
    (c) uncontrolled
    (d) exchange for
    (e) be governed by

SECTION III : PROBLEM SOLVING

41. Starting at 9.00 a.m. on a certain day, snow began to fall at a rate of $1\frac{1}{4}$ inches every two hours until 3.00 p.m. If there were already $2\frac{1}{4}$ inches of snow on the ground at 9.00 a.m. How many inches of snow were on the ground at 3.00 p.m. that day?
    (a) $3\frac{3}{4}$ (b) $6\frac{1}{2}$
    (c) $7\frac{3}{4}$ (d) $7\frac{1}{2}$
    (e) $9\frac{3}{4}$

42. The owner of boutique decides to calculate the percentage of customers who purchase hats. If 40 percent of the store's consumers decide to purchase items, and of those customers 15 percent purchase hats, what percent of the stores customers purchase hats?
    (a) 55%   (b) 45%
    (c) 37.5%   (d) 6%
    (e) 4%

43. The result obtained when X is multiplied by Y is equal to ten times the result obtained when Y is subtracted from X. If Y equals 5, what does X equal?
    (a) 50   (b) 25
    (c) 15   (d) 10
    (e) 5

44. The formula $E = \sqrt{\dfrac{a}{6}}$ describes the relationship between the length of the edge 'E' of a cube and the surface area 'a' of the cube. How much longer is the edge of a cube with a surface area of 1350 than the edge of one with a surface area of 600?
    (a) 5   (b) 15
    (c) 150   (d) 250
    (e) 750

45. $\left[1 - \left(\dfrac{2}{3}\right)^2\right]^2 =$
    (a) $\dfrac{5}{9}$ (b) $\dfrac{25}{81}$
    (c) $\dfrac{125}{729}$ (d) $\dfrac{1}{27}$
    (e) $-\dfrac{1}{3}$

46. If $X \neq 1$ then $\dfrac{3x^2 + 6x - 9}{3x - 3} =$
    (a) $x + 1$ (b) $x - 1$
    (c) $x + 3$ (d) $3x + 1$
    (e) $3x + 3$

47. How many integers between 100 and 150 inclusive, can be evenly divided by neither 3 nor 5?

(a) 33   (b) 28
(c) 27   (d) 26
(e) 24

48. A machine costs 'm' rupees per day to maintain and 'n' paise for each unit it produces. If the machine is operated 7 days a week and produces 'r' units in a week. Which of the following is the total cost, in rupees, of operating the machine for a week?

(a) 700 mnr   (b) 7m + 100nr

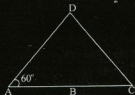(c) $\dfrac{700m+nr}{100}$ (d) $\dfrac{7m+nr}{100}$

(e) m + nr

49. A car averages 40 miles per hour for the fist 6 hours of a trip and average 60 miles per hour for each additional hour of travel time. If the average speed for the entire trip is 55 miles per hour, how many hours long is the trip?

(a) 8   (b) 12
(c) 16   (d) 18
(e) 24

50. If X, Y and Z are non - zero numbers such that $1 \geq Y > X$ and $XY = Z$ which of the following CANNOT be true?

(a) $Z > 0$ (b) $Y > Z$
(c) $X > Z$ (d) $Z = X$
(e) $Y = Z$

51. In the figure give, if a line segment connecting points B and D is perpendicular to AC and the area of triangle ADC is $\dfrac{3\sqrt{3}}{2}$ then BC =

(a) $\sqrt{2}$ (b) $\sqrt{3}$
(c) 2   (d) $3\sqrt{3}$
(e) 6

52. If the area of a circle is 36π, what is the

circumference?

(a) 6π (b) 12π
(c) 22π (d) 24π
(e) 18

Use the following tables for question 53 to 55:

Distribution of work hours in a factory

Number of workers		Number of hours worked
20		45 - 50
15		40 - 44
25		35 - 39
16		30 - 34
4		0 - 29
80	TOTAL	3.100

53. What percentage of workers worked 40 or more hours?

(a) 18.75   (b) 25
(c) $33\dfrac{1}{3}$ (d)40
(e) 43.75

54. The number of workers who worked from 40 to 44 hours is x times the number who worked upto 29 hours, where x is

(a) $\dfrac{15}{16}$ (b) $3\dfrac{3}{4}$

(c) 4   (d) 5

(e) $6\dfrac{1}{4}$

55. Which of the following statements can be inferred from the table?

  I. The average number of hours worked per worker is less than 40
  II. At least 3 worked more than 48 hours.
  III. More than half of all the workers worked more than 40 hours.

(a) I only   (b) II only
(c) I and II only   (d) I and III only
(e) I, II and III

56. If hose A can fill up a tank in 20 minutes and hose B can fill up the same tank in 15 minutes,

how long will it take for the hoses together to fill up the tank?

(a) 5 minutes   (b) $7\frac{1}{2}$ minutes

(c) $8\frac{4}{7}$ minutes   (d) $9\frac{2}{7}$ minutes

(e) 12 minutes

57. What is the farthest distance between two points on a cylinder of height 8 and radius 1?

(a) $8\sqrt{2}$ (b) $8\sqrt{3}$

(c) 16   (d) $8\sqrt{5}$

(e) $8(2\pi+1)$

58. Joe sold his skis for Rs. 160.00 and his ski boots for Rs.96000 He made a profit of 20% on his boots and took a 10% loss on his skis. He ended up with a

(a) loss of Rs. 1.78

(b) loss of Rs. 1.50

(c) gain of Rs. 3.20

(d) gain of Rs. 7.53

(e) gain of Rs. 17.06

59. In a survey of political preferences, 78% of those asked were in favour of atleast one of the

proposals; I, II and III. 50% of those asked favoured proposal I, 30% favoured proposal II and 20% favoured proposal III. If 5% of those asked favoured all three of the proposals, what percentage of those asked favoured more than one of the three proposals?

(a) 5   (b) 10

(c) 12   (d) 17

(e) 22

60. A store has a parking lot that contains 70 parking spaces. Each row in the parking lot contains the same number of parking spaces. The store has bought additional property in order to build an addition to the store. When the addition is built, 2 parking spaces will be lost from each row; however, 4 more rows will be added to the parking lot. After the addition is built, the parking lot will still have 70 parking spaces, and each row will contain the same number of parking spaces as every other row. How many rows were in the parking lot before the addition was built?

(a) 5   (b) 6

(c) 7   (d) 10

(e) 14

SECTION – IV : DATA SUFFICIENCY

Directions : Each of the following problems has a question and two statements which are labelled (1) and (2) in which certain data are given. You have to decide whether the data given in the statements are sufficient for answering the question. Using the data given in the problem plus your knowledge of mathematics and every day facts, choose:

(A) *If you can get the answer from (1) ALONE but not from (2) alone.*

(B) *If you can get the answer from (2) ALONE but not from (1) alone.*

(C) *If you can get the answer from BOTH (1) and (2) TOGETHER, but not from (1) alone or (2) alone.*

(D) *If EITHER statement (1) ALONE OR statement (2) ALONE suffices.*
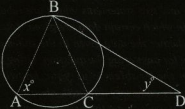
(E) *If you CANNOT get the answer from statement (1) and (2) TOGETHER, but need even more data.*

61. Rakesh purchased 18 cans of soda, some of which contain diet soda. How many of the cans did not contain diet soda?

(a) Of the cans Rakesh purchased, the number containing diet soda is equal to the number not containing diet soda

(b) Of the cans Rakesh purchased, the number containing diet soda is odd.

62. Vijay must visit either the library or the canteen. Which one of these two buildings is a greater distance from his hostel?

(a) It takes Vijay an average of 20 minutes to ride his bike from his hostel

(b) It takes Vijay an average of 20 minutes to ride his bike from the library to the canteen.

63. Is the statement $0 < Y < 1$ true?
(a) $0 < \sqrt{Y} < 1$ (b) $Y^2 = \frac{1}{4}$

64. In 1998, was the number of people in city A greater than three times the number of people in city B?
(a) The base of triangle T is 12.
(b) The ratio of the height of T to the base of T is 3 : 1

65. In 1998, was the number of people in city A greater than three times the number of people in city B?
(a) In 1998, there were approximately 1.1 million more people in city A than in city B
(b) In 1998, the 300,000 Muslims in city A made up 20 percent of its population and the 1,41,000 Christians in city B made up 30 percent of its population

66. If point A is directly north of point B and directly west to point C, what is the distance from point A to point C?
(a) The distance from B to C is 20.
(b) The distance from A to B is equal to half the distance from B to C.

67. Is V equal to the average (arithmetic mean) of s, t and u?
(a) $s + t + u = 3V$ (b) $\frac{s+t+u}{6} = \frac{V}{2}$

68. What is the maximum capacity in cups of a pail that contains only sand and is filled to three fourths of its capacity?
(a) It one cup of sand were added to the pail it would be filled to seven eights to its capacity
(b) If two cups were removed from the pail it would be filled to one half of its capacity

69. What is the value of y?
(a) $y^2 = 4y$
(b) y is an even integer

70. Over a seven-week period a company monitored the output of two of its branches X and Y. Each week the company calculated how many units were produced in each branch. The branch that produced the greatest number of units for four or more of the seven weeks was considered the more efficient branch. Which office was deemed the more efficient
(a) Over the seven - week period Branch X produced twice as many units as Branch Y.
(b) The branch that was more efficient was known by the fifth week.

71. A computer generates non-zero numbers for the figure above so that the product of the numbers along any vertical column is equal to the product of the numbers in any horizontal row. What number does s represent?

	s	
u	t	8
	4	

(a) u equals 6
(b) t equals 2

72. AC is a diameter of the circle. ACD is a straight line. What is the value of x?

(a) X = 2Y
(b) AB = BC

73. Two pipes A and B empty into a reservoir, Pipe A can fill the reservoir in 30 minutes by itself. How long will it take for pipe A and pipe B together to fill up the reservoir?
(a) By itself, pipe B can fill the reservoir in 20 minutes.

(b) Pipe B has a larger cross sections area than pipe A

74. If a, b and c are digits is a + b + c a multiple of 9? digit in one of the integers 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

(a) The three digit number abc is a multiple of 9

(b) $(a \times b) + c$ is a multiple of 9.

75. A sequence of numbers $a_1, a_2, a_3, \ldots \ldots$ is given by the rule $a_n^2 = a_{n+1}$ Does 3 appear in the sequence?

(a) $a_1 = 2$ (b) $a_3 = 16$

76. Is $\dfrac{X}{12} > \dfrac{Y}{40}$?

(a) 12X < 4Y   (b) 10X > 3Y

77. Did the price of a bushel of soyabean increase during every week of 200?

(a) The price of a bushel of soyabeans was Rs. 2 on Jan. 1, 2000.

(b) The price of a bushel of soyabeans was Rs. 4 on Jan. 1, 2001.

78. Will the circle with centre O fit inside the square ABCD?

(a) The diameter of the circle is less than a side of the square

(b) The area of the circle is less than the area of the square

79. There are 450 boxes to load on a truck. A and B working independently but at the same time would take 30 minutes to load the truck. How long should it take B working alone to load the truck?

(a) A loads twice as many boxes as B

(b) A would take 45 minutes by himself

80. Is ABCD a rectangle?

(a) AC and BD bisect each other at E.

(b) Angle ADC is 90°

SECTION - V : ENGLISH USAGE

Directions : In each of the following sentences four words or phrases have been underlined. Only one underlined part in each sentences is not acceptable in standard English. Pick up that part (1) or (2) or (3) or (4). If there no mistake mark (5).

81. The union delegates who are going to the
        1   2
convention in Goa are Raju, Sivakumar and
            3
me. No error.
4   5

82. Although Ravi attended college until recently
    1   2   3
he left without getting his degree No Error.
         4   5

83. East Bengal's foot ball captain could pass block
            1   2
block and tackle better than any one on the
         3   4
team.No Error.
       5

84. US boys insist on your giving them what is theirs
   1   2   3
and US what is ours No Error.
              4
            5

85. If one reads a great many articles in Elementary
               1
English you will become familiar with the
           2   3

problems of the <u>beginning</u> teacher of reading
                        4

<u>No Error</u>.
   5

86. The crisis <u>in</u> the countries of the <u>Middle East</u>
              1   2
    <u>have</u> <u>been</u> discussed at our <u>weekly</u> forums.
       3   3   4
    <u>No Error</u>
       5

87. <u>Being that</u> you <u>are interested</u> in the outcome
    1   2
    of the election, <u>let us</u> wait until the final tally
                      3
    <u>has</u>   been   made.   <u>No   Error</u>
       4   5

88. The <u>retreat</u> of the enemy soldiers in to caves
         1
    and tunnels <u>are deceiving</u> the <u>oncoming</u>
                   2   3
    <u>infantrymen</u>.   <u>NoError</u>
       4   5

89. The chairman of <u>the Board</u> of Directors made
                      1
    it <u>clear</u> at the meeting that he <u>will not</u> step
       2   3
    down form his position <u>as Chairman</u>.
                            4
    <u>No Error</u>.
       5

90. <u>In contrast</u> to <u>Sachin's</u> intellectual prowess
    1   2
    were his <u>slovenly</u> appearance and his nervous
              3 4
    demeanor.   <u>No   Error</u>
                                       5

91. A text book <u>used</u> in a college class <u>usually</u>
                   1   2
    <u>always contains</u> an introduction, a glossary,
    3   3
    and an <u>annotated</u> bibliography. <u>NoError</u>.
            4   5

92. After the critics see the <u>two plays</u>, they will as
                                1
    a result of <u>their</u> experience an background be
                 2
    able to judge which is the <u>most</u> effective and
                                4
    moving. <u>No Error</u>.
              5

93. A recent poll <u>has indicated</u> that Ramya is
                     1
    considered <u>brighter</u> than <u>any student</u> in the
                 2   3
    <u>senior classes</u> in Rosary Matriculation
       4
    School. <u>No Error</u>.
              5

94. Ashok and <u>him</u>, after spending several hours
                 1
    trying to ascertain the <u>whereabouts</u> of the
                               2
    missing children, <u>finally</u> discovered them in
                         3
    their <u>aunt's</u> house. <u>No Error</u>.
            4   5

95. <u>On</u> any <u>given</u> weekend - especially holiday
    1   2
    <u>weekends</u> - the number of highway deaths <u>is</u>
       3   4
    predictable <u>No Error</u>.
                  5

96. Popular impressions <u>about</u> slang are often
                          1
    erroneous <u>their</u> is no necessary connection,
                2
    <u>for example</u>, <u>between</u> what is slang and what
       3   4
    is
    ungrammatical. <u>No Error</u>.
                     5

97. I intend <u>to have written</u> her a letter yesterday
                1
    but <u>I forgot</u> to because of the <u>day and evening</u>
          2   3

appointments that I had. No Error.
          4   5

98. Although Renuka has been to the mountains
                         1

many times before, she still loves it. No Error.
  2   3   4   5

99. In the yard there was a rake a shovel and a hose
            1

all getting rusty in the rain, but no one would
           2   3

run out to put them away. No Error.
                    4

100. Of the three plants Fathima had in her
      1   2

apartment, only the ivy, which is the hardier
                           3

lived through the winter. No Error.
           4   5