

## MAT Solved Paper-2006 (Feb.)

- An application was received by inward clerk in the afternoon of a week day. Next day he forwarded it to the table of the senior clerk, who was on leave that day. The senior clerk put up the application to the desk officer next day in the evening. The desk officer studied the application and disposed off the matter on the same day i.e., Friday. Which day was the application received by the inward clerk?
    - Monday
    - Wednesday
    - Tuesday
    - Previous week's Saturday
  - In a queue of children, Kashish is fifth from the left and Mona is sixth from the right. When they interchange their places among themselves, Kashish becomes thirteenth from the left. Then, what will be Mona's position from the right?
    - 4th
    - 14th
    - 8th
    - 15th
  - If the numbers from 1 to 45 which are exactly divisible by 3 are arranged in ascending order, minimum number being on the top, which would come at the ninth place from the top?
    - 18
    - 24
    - 21
    - 27
  - Which letter should be the ninth letter to the left of the ninth letter from the right, if the first half of the alphabet of English are reversed?
    - D
    - F
    - E
    - I
  - In a family, a couple has a son and a daughter. The age of the father is three times of his daughter and the age of the son is half of his mother. The wife is nine years younger to her husband and the brother is seven years older than his sister. What is the age of the mother?
    - 40 years
    - 50 years
    - 45 years
    - 60 years
  - A number of friends decided to go on a picnic and planned to spend Rs. 96 on eatables. Four of them, did not turn up. As a consequence, the remaining ones had to contribute Rs. 4 each extra. The number of those who attended the picnic was?
    - 8
    - 16
    - 12
    - 24
  - Out of a total of 120 musicians in a club, 5% can play all the three instruments—guitar, violin and flute. It so happens that the number of musicians who can play any two and only two of the above instruments is 30. The number of musicians who can play the guitar alone is 40. What is the total number of those who can play violin alone or flute alone?
    - 30
    - 44
    - 38
    - 45
  - There are 50 students admitted to a nursery class. Some students can speak only English and some can speak only Hindi. Ten students can speak both English and Hindi. If the number of students who can speak English is 21, then how many students can speak Hindi, how many can speak only Hindi and how many can speak only English?
    - 39, 29 and 11 respectively
    - 28, 18 and 22 respectively
    - 37, 27 and 13 respectively
    - 21, 11 and 29 respectively
  - The letters of the name of a vegetable are I, K, M, N, P, P, U. If the letters are rearranged correctly, what is the last letter of the word formed?
    - M
    - N
    - K
    - P
  - At a farm, there are hens, cows, bullocks, and keepers to look after them. There are 69 heads less than legs; the number of cows is double than that of the bullocks; the number of cows and hens is the same and there is one keeper per ten birds and cattle. The total number of hens plus cows and bullocks and their keepers does not exceed 50. How many cows are there?
    - 10
    - 14
    - 12
    - 16
- Directions (11–15) :** In each question, a statement is followed by two assumptions numbered I and II. Consider the statement and the following assumptions to decide which of the assumptions is implicit in the statement.  
Mark answer as :
- if only assumption I is implicit;
  - if either I or II is implicit;
  - if only assumption II is implicit;
  - if neither I nor II is implicit.
- Statement :** Like a mad man, I decided to follow him.  
**Assumptions :**
    - I am not a mad man.
    - I am a mad man.
  - Statement :** If it is easy to become an engineer, I don't want to be an engineer.  
**Assumptions :**
    - An individual aspires to be professional.
    - One desires to achieve a thing which is hard earned.
  - Statement :** All the employees are notified that the organisation will provide transport facilities at half the cost from the nearby railway station to the office except those who have been provided with travelling allowance.  
**Assumptions :**
    - Most of the employees will travel by the office transport.
    - Those who are provided with travelling allowance will not read such notice.
  - Statement :** An advertisement of a Bank "Want to open a bank account ! Just dial our 'room service' and we will come at your doorstep."  
**Assumptions :**
    - There is a section of people who require such service at their home.
    - Now-a-days banking has become very competitive.
  - Statement :** I can take you quickly from Kanpur to Lucknow by my cab but then you must pay me double the normal charges.  
**Assumptions :**
    - Normally, it will take more time to reach Lucknow from Kanpur.

II. People want to reach quickly but they will not pay extra money for it.

**Directions (16–20) :** In each of the following questions, various terms of a series are given with one term missing as shown by (?). Choose the missing term.

16. QPO, SRQ, UTS, WVU, (?)  
(a) XVZ (b) YXW  
(c) ZYA (d) VWX
17. 19, 2, 38, 3, 114, 4, (?)  
(a) 228 (b) 352  
(c) 256 (d) 456
18. YEB, WFD, UHG, SKI, (?)  
(a) QOL (b) TOL  
(c) QGL (d) QNL
19. AZ, CX, FU, (?)  
(a) IR (b) JQ  
(c) IV (d) KP
20. 2Z5, 7Y7, 14X9, 23W11, 34V13, (?)  
(a) 27U24 (b) 45U15  
(c) 47U15 (d) 47V14

**Directions (21–25) :** Read the information given below carefully and answer the questions that follow.

From a group of six boys M, N, O, P, Q, R and five girls G, H, I, J, K; a team of six is to be selected. Some of the criteria of selection are as follows :

M and J go together.  
O cannot be placed with N.

I cannot go with J.

N goes with H.

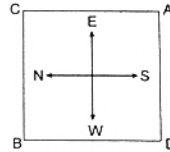
P and Q have to be together.

K and R go together.

Unless otherwise stated, these criteria are applicable to all the following questions.

21. If the team consists of two girls and I is one of them, the other members are :  
(a) GMRPQ  
(b) KOPQR  
(c) HNOFQ  
(d) KRMNP
22. If the team has four boys including O and R, the members of the team other than O and R are :  
(a) HIPQ  
(b) GJPQ  
(c) GKPQ  
(d) GJMP
23. If four members are boys, which of the following cannot constitute the team?  
(a) GJMOPQ  
(b) JKMNOR  
(c) HJMNPQ  
(d) JKMPQR
24. If both K and P are members of the team and three boys in all are included in the team, the members of the team other than K and P are :  
(a) GIRQ  
(b) HIRQ  
(c) GJRM  
(d) IJRQ
25. If the team has three girls including J and K, the members of the team other than J and K are :  
(a) GHNR  
(b) MORG  
(c) NOG  
(d) HOR

**Directions (26–30) :** These questions are based on the diagram given below showing four persons stationed at the four corners of a square piece of plot as shown.



26. A starts crossing the plot diagonally. After walking half the distance, he turns right, walks some distance and turns left. Which direction is A facing now?  
(a) North-east (b) North  
(c) North-west (d) South-east
27. From the original position given in the above figure, A and B move one arm length clockwise and then cross over to the corner diagonally opposite; C and D move one arm length anti-clockwise and cross over the corner diagonally opposite. The original configuration ABCD has now changed to :  
(a) CBDA  
(b) DACB  
(c) BDAC  
(d) ACBD
28. From the original position, B and D move one and a half length of sides clockwise and anti-clockwise respectively. Which one of the following statements is true?  
(a) B and D are both at the midpoint between A and C  
(b) B is at the midpoint between A and C, and D is at the corner originally occupied by A.  
(c) D is at the midpoint between A and C, and B is at the corner originally occupied by C.  
(d) B and D are both at the midpoint between A and D.
29. From the positions in the original figure, C and A move diagonally to opposite corners and then one side each clockwise and anti-clockwise respectively. B and D move two sides each clockwise and anti-clockwise respectively. Where is A now?  
(a) At the north-west corner  
(b) At the south-east corner  
(c) At the north-east corner  
(d) At the south-west corner
30. After the movements given in the above question, who is at the north-west corner?  
(a) A (b) C  
(c) B (d) D

**Directions (31–35) :** In each question, a statement is followed by three courses of action numbered I, II and III. Assume everything in the statement to be true. Decide which of the three given suggested courses of action logically follows for pursuing.

31. **Statement :** In one of the worst accidents on a railway level crossing, fifty people died when a bus carrying them collided with a running train.

**Courses of action :**

- I. The train driver should immediately be suspended.
  - II. The driver of the bus should be tried in court for negligence on his part.
  - III. The railways authorities should be asked to man all its level crossings.
- (a) None follows (b) Only III follows  
(c) Only I and II follow (d) Only II and III follow

32. **Statement** : There was a spurt in criminal activities in the city during the recent festival season.

**Courses of action** :

- I. The police should immediately investigate into the causes of this increase.
- II. In future the police should take adequate precautions to avoid recurrence of such a situation during festivals.
- III. The known criminals should be arrested before any such season.

- (a) None follows (b) Only II and III follow  
(c) Only I and II follow (d) All follow

33. **Statement** : A mass mortality of shrimps in ponds on entire Andhra coast has recently been reported due to the presence of a virus.

**Courses of action** :

- I. The water of the ponds affected should immediately be treated for identifying the nature of the virus.
- II. The catching of shrimps from the ponds should temporarily be stopped.
- III. The fishermen should be asked to watch for the onset of such phenomenon in nature.

- (a) Only I follows  
(b) All follow  
(c) Only I and II follow  
(d) Only II and III follow

34. **Statement** : The weather bureau has through a recent bulletin forecast heavy rainfall during the next week which may cause water logging in several parts of the city.

**Courses of action** :

- I. The bulletin should be given wide publicity through the mass media.
- II. The civic authority should keep in readiness the pumping system for removal of water from these parts.
- III. The people should be advised to stay indoors during the period.

- (a) None follows (b) Only II follows  
(c) Only I and II follow (d) Only II and III follow

35. **Statement** : The world will have to feed more than 10 billion people in the next century, of whom half will be in Asia and will eat rice as their staple food.

**Courses of action** :

- I. More funds should immediately be allocated for rice research to help ensure adequate supplies.
- II. The people in Asia should be encouraged to change their food habits.
- III. The rice should be grown in countries outside Asia to meet the demand.

- (a) Only I and II follow (b) All follow  
(c) Only II and III follow (d) Only I and III follow

**Directions (36-40)** : Read the following passage and examine each inference given below it in the context of this passage.

Mark the answer as :

- (a) if the inference is 'definitely true';
- (b) if the 'data provided is inadequate';
- (c) if the inference is 'probably true';
- (d) if the inference is 'definitely false'.

The space exploration has been done mainly by using unmanned satellites called spaces probes containing a large variety of latest scientific instruments on board. These space probes have provided us the close-up pictures and other data about planets and other bodies in the outer space. The climax of the intensive American space programme came when Neil Armstrong became the first man to set foot on the moon on July 20, 1969. Originally,

the artificial satellites were launched for studying the upper atmosphere of the earth.

36. The space probes have increased our knowledge about space and the bodies in it.

37. Space probes are meant to study the upper atmosphere of the earth only.

38. Neil Armstrong was the first man to go into space.

39. Space probes are provided with computers.

40. Moon has been explored by man.

**Directions (41-56)** : Study the passages below carefully and answer the questions that follow.

### PASSAGE 1

The National Institute of Oceanography (NIO) in Goa has developed a real-time reporting and Internet-accessible coastal sea-level monitoring system and it has been operational at Verem jetty in the Mandovi estuary in Goa since September 24, 2005. The gauge uses a cellular modem to put on the Internet real-time sea-level data, which can be accessed by authorized personnel. By using a cellular phone network, coastal sea-level changes are continuously updated on a web-server. The sea-level gauge website can be made available to television channels to broadcast real-time visualization of the coastal sea level, particularly during oceanogenic hazards such as storm surges or a Tsunami. A network of such gauges along the coast and the islands that lie on either side of the mainland would provide data to disaster management agencies to disseminate warnings to coastal communities and beach tourism centres.

The gauge incorporates a bottom pressure transducer as the sensing element. The sea unit of the gauge, which houses the pressure transducer, is mounted within a cylindrical protective housing, which in turn is rigidly held within a mechanical structure. This structure is secured to a jetty. The gauge is powered by a battery, which is charged by solar panels. Battery, electronics, solar panels, and cellular modems are mounted on the top portion of this structure. The pressure sensor and the logger are continuously powered on, and their electrical current consumption is 30 mA and 15 mA respectively. The cellular modem consumes 15 mA and 250 mA during standby and data transmission modes respectively. The pressure sensor located below the low-tide level measures the hydrostatic pressure of the overlying water layer. An indigenously designed and developed microprocessor based data logger interrogates the pressure transducer and acquires the pressure data at the rate of two samples a second. The acquired pressure data is averaged over an interval of five minutes to remove high-frequency wind-waves that are superimposed on the lower frequency tidal cycle. The averaged data is recorded in a multimedia card. The measured water pressure is converted to water level using sea water density and acceleration owing to the earth's gravity. The water level so estimated is then referenced to Chart Datum (CD), which is the internationally accepted reference level below which the sea level will not fall. The data received at the Internet server is presented in graphical format together with the predicted sea level and the residual. The residual sea level (that is, the measured minus the predicted sea level) provides a clear indication of sea-level oscillation and a quantitative estimate of the anomalous behaviour, the driving force for which could be atmospheric forcing (storm) or geophysical (Tsunami). A network of sea-level gauges along the Indian coastline and islands would also provide useful information to

mariners for safe navigation in shallow coastal waters and contribute to various engineering projects associated with coastal zone management, besides dredging operations, port operations and management of inland water resources (reservoirs, dams). The system can also be used effectively for sharing of water resources between States and neighbouring countries, and for monitoring and implementation of river water treaties with greater transparency. Among the various communication (technologies used for real-time transmission of sea-level data are the wired telephone connections, VHF/UHF transceivers, satellite transmit terminals and cellular connectivity. Wired telephone connections are severely susceptible to loss of connectivity during natural disasters such as storm surges, primarily because of telephone line breakage. Communication via VHF/UHF transceivers is limited by line-of-sight distance between transceivers and normally offer only point-to-point data transfer. Satellite communication via Platform Transmit Terminals (PTTs) has wide coverage and, therefore, allows data reception from offshore platforms. However, data transfer speeds are limited. Further, many satellite (for example, GOES, INSAT) permit data transfer only at predefined time-slots, thereby inhibiting continuous data access. Technologies of data reporting via satellite have undergone a sea change recently in terms of frequency of reportage, data size, recurring costs and so forth. Broadband technology has been identified as one that can be used optimally for real-time reporting of data because of its inherent advantages such as a continuous two-way connection that allows high-speed data transfer and near real-time data reporting. While satellite communication is expensive, wireless communication infrastructure and the ubiquity of cellular phones have made cellular communication affordable. Low initial and recurring costs are an important advantage of cellular communication. A simple and cost-effective methodology for real-time reporting of data is the cellular-based GPRS technology, which has been recently implemented at the NIO for real-time reporting of coastal sea level data.

41. According to the passage which one of the following statements is *not* true?
- (a) Network of gauges along the coast and the islands would help disaster management agencies to disseminate warnings.
  - (b) Cellular base GPRS technology is not a simple and cost effective method for real-time reporting of data.
  - (c) Disadvantage of wired telephone connections is the loss of connectivity during disasters due to line breakages.
  - (d) Data reporting via satellites has undergone changes in terms of frequency, data size, recurring cost etc.
42. What is the outermost part of the sea unit of the gauge?
- (a) Pressure transducer
  - (b) Mechanical structure
  - (c) Cylindrical protective housing
  - (d) Sensing element
43. What is the limitation of satellite communication via platform transmit terminals?
- (a) Coverage
  - (b) Off shore platforms
  - (c) Data transfer speed
  - (d) None of these
44. Which one of the following relationships is correct as per the passage?
- (a) Predicted sea level is a product of measured sea level and residual sea level.

- (b) Predicted sea level is the sum of measured sea level and residual sea level.
- (c) Residual sea level is the sum of predicted sea level and measured sea level.
- (d) Predicted sea level is obtained by dividing measured sea level and residual sea level.

#### PASSAGE-2

The World Trade Organisation (WTO) Ministerial Conference, which commenced in Hong Kong on December 13, 2005 adopted a declaration on December 18, 2005 after six days of acrimonious negotiations between developed and developing countries. Although initially there was a show of unity among developing countries especially on the issue of agriculture, which was reflected in the formation of the G-110, the final outcome of the Ministerial Declaration has been thoroughly anti-development. The Ministerial Declaration has not only failed to address substantially the concerns of developing countries but has actually paved the way for an eventual trade deal by the end of 2006, which is going to be severely detrimental to their interests. It is clear by now that the so-called 'Development Round' launched in Doha in 2001 has been manipulated by developed countries, especially the United States and the members of the European Union, to push for further trade liberalization in developing countries while they continue to protect their economies through high subsidies and non-tariff barriers. Far from redressing the asymmetries of the global trading system, the Doha round seems to be heading for another catastrophe for the developing world. The E.U. stuck to its intransigent position on the deadline of 2013 for the elimination of export subsidies and developing countries gave up their demand for an earlier end date despite the initial collective efforts of the G-110. The gross inadequacy of this so called 'concession' can be understood from the fact that export subsidies comprise less than 2 per cent of the total farm subsidies in the developed world. There has been no concrete commitment on the reduction of domestic support other than export subsidies. The E.U. can continue to subsidize agriculture to the tune of 55 billion Euros a year. The E.U. budget adopted recently ensures that nothing can be touched in the agriculture budget till at least 2013. The U.S. budget reconciliation process and the final vote in the Congress are set to extend domestic support to agriculture and counter-cyclical support to commodities up to around 2011. Even in the case of cotton, the agreement to eliminate subsidies by 2006 is restricted to export subsidies only and does not include other forms of domestic support. The U.S. refused to give duty-free access to exports from Least Developed Countries (LDCs) for 99.9 per cent of product lines and the final agreement was on 97 per cent of them, which would enable the U.S. and Japan to deny market access to LDCs in product lines such as rice and textiles. Much of the Aid for Trade for LDCs, which is being showcased by developed countries as a 'development package', is disguised in conditional loan packages that are contingent upon further opening up of their markets. India's prime interest in agriculture was to ensure the protection of its small and marginal farmers from the onslaught of artificially low-priced imports or threats thereof. The proposals for agricultural tariff cuts, which are already on the table, are quite ambitious and the G-20 has already committed itself to undertake cuts to the extent of two-thirds of the level applicable to developed countries. Moreover, India has 100 per cent tariff lines

bound in agriculture with the difference in the applied level and the bound level not very marked in many lines. In this context, the systemic problem faced by India's small and marginal farmers practicing subsistence agriculture will only get aggravated as a result of the impending tariff cuts that have been agreed upon. The government claims that the right to designate a number of agricultural product lines as special products based upon the considerations of food and livelihood security and to establish a special safeguard mechanism based on import quantity and price triggers, which have been mentioned in the Ministerial Text, adequately addresses the concerns of Indian farmers. The claim is questionable since the nature as well as the extent of protection under the category of special products remains restricted and the special safeguard mechanism, admittedly, is a measure to deal with an emergency and is of 'a temporary nature'. Therefore, seen in the light of the insignificant reductions in domestic farm subsidies by developed countries, tariff reduction commitments by developing countries seem to be totally unjustifiable. Developing countries have also agreed on the Swiss formula for tariff cuts under Non-Agricultural Market Access (NAMA). Although the coefficients will be negotiated later, it is unlikely that developed countries will agree upon sufficiently large coefficients for the formula that would ensure adequate policy space for developing countries in future to facilitate development of different sectors of their industries. The Ministerial Text's ritual references to 'less than full reciprocity' and 'special and differential treatment' fails to conceal the fact that the flexibilities provided by the July framework regarding the nature of the tariff reduction formula, product coverage, the extent of binding and the depth of cuts have been done away with. Moreover, no concrete commitment has been obtained in the Ministerial Text for the removal of the Non-Tariff barriers by developed countries, which is their principal mode of protection, despite developing countries making such major concessions on industrial tariff cuts. The fact of the matter is that developing countries have committed themselves to cuts in both agricultural and industrial tariffs, without getting anything substantial in return from developed countries. And India has facilitated the adoption of this bad deal in the backdrop of an acute crisis faced by Indian agriculture. Unfortunately, developing countries have lost the opportunity to rework fundamentally the iniquitous agreement on Agriculture and protect the domestic policy space vis-a-vis industrial protection by developing countries, which could have been achieved by galvanizing the unity of the G-110.

45. What was/were the flexibility/flexibilities envisaged by the July framework?
- (a) Depth of cuts
  - (b) Product coverage
  - (c) Tariff reduction formula
  - (d) All of the above
46. Which one of the following statements is not correct as per the passage?
- (a) Aid which is given for the Least Developed Countries (LDCs) by the developed countries in the form of 'developed package' is conditioned upon further opening of their market.
  - (b) Reduction in the domestic farm subsidies by the developed countries is insignificant and the commitment made by the developing countries for tariff reduction is unjustifiable.

- (c) India's main interest in agriculture is to protect its small and marginal farmers from the onslaught or artificially low priced imports or threats of such nature.
  - (d) Developed countries have given commitment to the ministerial Text on the removal of Non-Tariff barriers.
47. Which claim of the Indian Government is questionable?
- (a) Right to designate agriculture product lines as special products considering food and livelihood security.
  - (b) India has facilitated the adoption of a beneficial deal for agriculture at WTO.
  - (c) Formation of G-110 proves unity among developing countries.
  - (d) Developing countries can negotiate large coefficients on the Swiss formula for tariff cuts.
48. Why is it that the imbalances of the global trading system appear to be catastrophic?
- (a) EU has not moved away from its declared position
  - (b) US refused to give duty free access to exports from LDCs
  - (c) The collective efforts of G-110 failed.
  - (d) All of the above

### PASSAGE-3

It is easy to accept Freud as an applied scientist, and, indeed he is widely regarded as the twentieth century's master clinician. However, in viewing Marx as an applied social scientist the stance needed is that of a Machiavellian operationalism. The objective is neither to bury nor to praise him. The assumption is simply that he is better understood for being understood as an applied sociologist. This is in part the clear implication of Marx's Thesis on Feuerbach, which culminate in the resounding 11th thesis: "The philosophers have only interpreted the world in different ways; the point, however, is to change it". This would seem to be the tacit creed of applied scientists everywhere. Marx was no Faustian, concerned solely with understanding society, but a Prometheus who sought to understand it well enough to influence and to change it. He was centrally concerned with the social problems of a lay group, the proletariat, and there can be little doubt that his work is motivated by an effort to reduce their suffering, as he saw it. His diagnosis was that their increasing misery and alienation engendered endemic class struggle; his prognosis claimed that this would culminate in revolution; his therapeutic prescription was class consciousness and active struggle. Here, as in assessing Durkheim or Freud, the issue is not whether this analysis is empirically correct or scientifically adequate. Furthermore, whether or not this formulation seems to eviscerate Marx's revolutionary core, as critics on the left may charge, or whether the formulation provides Marx with a new veneer of academic respectability, as critics on the right may allege, is entirely irrelevant from the present standpoint. Insofar as Marx's or any other social scientist's work conforms to a generalized model of applied social science, insofar as it is professionally oriented to the values and social problems of laymen in his society, he may be treated as an applied social scientist. Despite Durkheim's intellectualistic proclivities and rationalistic pathos, he was too much the product of European turbulence to turn his back on the travail of his culture. "Why strive for knowledge of reality, if this knowledge cannot aid us in life," he asked. "Social science," he said, "can provide us with rules of action for the future." Durkheim, like Marx, conceived of science as an agency of social action, and like him was professionally oriented to the values and problems of laymen in his

society. Unless one sees that Durkheim was in some part an applied social scientist, it is impossible to understand why he concludes his monumental study of suicide with a chapter on 'Practical Consequences,' and why, in the Division of Labour, he proposes a specific remedy for anomie. Durkheim is today widely regarded as a model of theoretic and methodologic sophistication, and is thus usually seen only in his capacity as a pure social scientist. Surely this is an incomplete view of the man who regarded the practical effectiveness of a science as its principal justification. To be more fully understood, Durkheim also needs to be seen as an applied sociologist. His interest in religious beliefs and organization, in crime and penology, in educational methods and organization, in suicide and anomie, are not casually chosen problem areas. Nor did he select them only because they provided occasions for the development of his theoretical orientation. These areas were in his time, as they are today, problems of indigenous interest to applied sociologists in Western society, precisely because of their practical significance.

49. Which of the following, best describes the author's conception of an applied social scientist?
- (a) A professional who listens to people's problems
  - (b) A student of society
  - (c) A professional who seeks social action and change
  - (d) A proponent of class struggle
50. According to the author, which of the following did Marx and Durkheim have in common?
- (a) A belief in the importance of class struggle
  - (b) An interest in penology
  - (c) A desire to create a system of social organization
  - (d) Regard for the practical applications of science
51. It may be inferred from the passage that the applied social scientist might be interested in all of the following subjects except :
- (a) the theory of mechanics
  - (b) rehabilitation of juvenile delinquents
  - (c) how to make workers more efficient
  - (d) reduction of social tensions
52. Which of the following best summarizes the author's main point?
- (a) Marx and Durkheim were similar in their ideas.
  - (b) Philosophers, among others, who are regarded as theoreticians can also be regarded as empiricists.
  - (c) Freud, Marx, and Durkheim were all social scientists.
  - (d) Marx and Durkheim were applied social scientists because they were concerned with the solution of social problems.

**PASSAGE 4**

Unemployment is an important index of economic slack and lost output, but it is much more than that. For the unemployed person, it is often a damaging affront to human dignity and sometimes a catastrophic blow to family life. Nor is this cost distributed in proportion to ability to bear it. It falls most heavily on the young, the semiskilled and unskilled, the black person, the older worker, and the underemployed person in a low income rural area who is denied the option of securing more rewarding urban employment.

The concentrated incidence of unemployment among specific groups in the population means far greater costs to society than can be measured simply in hours of involuntary idleness or dollars of income lost. The extra costs include disruption of the careers of young people, increased juvenile delinquency, and perpetuation of

conditions which breed racial discrimination in employment and otherwise deny equality of opportunity. There is another and more subtle cost. The social and economic strains of prolonged underutilization create strong pressures for cost increasing solutions. On the side of labour, prolonged high unemployment leads to 'share-the-work' pressures for shorter hours, intensifies resistance to technological change and to rationalization of work rules, and, in general, increases incentives for restrictive and inefficient measures to protect existing jobs. On the side of business, the weakness of markets leads to attempts to raise prices to cover high average overhead costs and to pressures for protection against foreign and domestic competition. On the side of agriculture, higher prices are necessary to achieve income objectives when urban and industrial demand for foods and fibers is depressed and lack of opportunities for jobs and higher incomes in industry keep people on the farm. In all these cases, the problems are real and the claims understandable. But the solutions suggested raise costs and promote inefficiency. By no means the least of the advantages of full utilization will be a diminution of these pressures. They will be weaker, and they can be more firmly resisted in good conscience, when markets are generally strong and job opportunities are plentiful. The demand for labour is derived from the demand for the goods and services which labour participates in producing. Thus, unemployment will be reduced to 4 per cent of the labour force only when the demand for the myriad of goods and services... automobiles, clothing, food, haircuts, electric generators, highways, and so on ... is sufficiently great in total to require the productive efforts of 96 per cent of the civilian labour force. Although many goods are initially produced as materials or components to meet demands related to the further production of other goods, all goods (and services) are ultimately destined to satisfy demands that can, for convenience, be classified into four categories: consumer demand, business demand for new plants and machinery and for additions to inventories, net export demand of foreign buyers, and demand of government units, federal, state, and local. Thus Gross National Product (GNP), our total output, is the sum of four Major components of expenditure; personal consumption expenditures, gross private domestic investment, net exports, and government purchases of goods and services. The primary line of attack on the problem of unemployment must be through measures which will expand one or more of these components of demand. Once a satisfactory level of employment has been achieved in a growing economy, economic stability requires the maintenance of a continuing balance between growing productive capacity and growing demand. Action to expand demand is called for not only when demand actually declines and recession appears but even when the rate of growth of demand falls short of the rate of growth of capacity.

53. According to the passage, unemployment is an index of :
- (a) over-utilization of capacity
  - (b) diminished resources
  - (c) economic slack and lost output
  - (d) the employment rate
54. Serious unemployment leads labour groups to demand :
- (a) more jobs by having everyone work shorter hours
  - (b) 'no fire' policies
  - (c) higher wages to those employed
  - (d) cost-cutting solutions

55. According to the passage, a typical business reaction to a recession is to press for :  
 (a) higher unemployment insurance  
 (b) government action  
 (c) protection against imports  
 (d) restrictive business practices
56. The demand for labour is :  
 (a) a derived demand  
 (b) about 4 per cent of the total work force  
 (c) declining  
 (d) dependent upon technology

**Directions (57–60) :** Pick out the most effective pair of words from the given choices (a), (b), (c) and (d) in each of these questions to make the sentence meaningfully complete.

57. Part of the confusion in our societies ..... from our pursuit of efficiency and economic growth, in the ..... that these are the necessary ingredients of progress.  
 (a) stems .... conviction  
 (b) derives ... evaluation  
 (c) emerges ... consideration  
 (d) extends ... planning
58. The problem of housing shortage ..... with the population explosion has also been ..... by this policy.  
 (a) projected ... discussed  
 (b) dispensed ... acknowledged  
 (c) threatened ... manifested  
 (d) compounded ... addressed
59. The quality of ..... between individuals and the organization for which they work can be ..... to the benefit of both parties.  
 (a) life ... conceptualized  
 (b) interaction ... improved  
 (c) service ... evaluated  
 (d) sophistication .... developed
60. Handicrafts constitute an important ..... of the decentralized sector of India's economy and ..... employment to over six million artisans.  
 (a) factors... aims (b) extension ... plants  
 (b) segment ... provides (d) period ... projects

**Directions (61–64) :** In each of these questions, there are three sentences given as (A), (B) and (C). Find out which two or three sentences convey the same meaning.

61. (A) The Manager would like you to help him locate the fault.  
 (B) If you help him locate the fault, the Manager would like you.  
 (C) The Manager desires that you should provide him the necessary assistance to locate the fault.  
 (a) (A) and (B) (b) (A) and (C)  
 (c) (B) and (C) (d) All of the above
62. (A) Although the strike of transporters continues, I shall come.  
 (B) I shall come if the strike of transporters continues.  
 (C) Even though I come, the strike of transporters is going to continue.  
 (a) (A) and (B) (b) (A) and (C)  
 (c) (B) and (C) (d) None of these
63. (A) Should you need a visa, you must submit an application along with your passport and a copy of income tax returns.  
 (B) Unless you do not submit an application along with your passport and a copy of income tax returns, you will not get visa.

- (C) If you submit your application along with your passport and a copy of income tax returns, you do not need visa.  
 (a) (A) and (B) (b) (A) and (C)  
 (c) (B) and (C) (d) None of these
64. (A) The judge remarked that not all the accused were really guilty.  
 (B) The judge remarked that some of the accused were guilty while others were not.  
 (C) The judge remarked that all those who were accused included some who were not really guilty.  
 (a) (A) and (B)  
 (b) (A) and (C)  
 (c) (B) and (C)  
 (d) All of the above

**Directions (65–68) :** In each of these questions, four words are given of which two words are most nearly the same or opposite in meaning. Find the two words which are most nearly the same or opposite in meaning and mark the number of the correct letter combination as your answer.

65. (A) affected (B) desolate  
 (C) anxious (D) lonely  
 (a) B–D (b) A–C  
 (c) B–C (d) A–D
66. (A) disruption (B) largesse  
 (C) affection (D) meanness  
 (a) B–D (b) B–C  
 (c) C–D (d) A–C
67. (A) awful (B) envious  
 (C) pleasant (D) fair  
 (a) A–B (b) A–C  
 (c) B–C (d) B–D
68. (A) serene (B) jealous  
 (C) identical (D) calm  
 (a) A–B (b) A–D  
 (c) A–C (d) B–C

**Directions (69–72) :** In each of the following questions, you are given a sentence. A part of the sentence is underlined. This is followed by four ways of phrasing the underlined part. Select the version that best rephrases the underlined part.

69. Teachers and parents alike should realize that to say a particular child is better than the other is doing a great injustice to both the children.  
 (a) say a particular child is better than the other is doing a great injustice to the former.  
 (b) say a particular child is better than other is doing a great injustice to both of them.  
 (c) say a particular child is better than the other is to do a great injustice to both the children.  
 (d) say a particular child is good than the other is doing a great injustice to both the children.
70. He sailed for New York on Monday, arriving there on Saturday for the much-awaited inauguration of the new hospital.  
 (a) and arrived there on Saturday for the much-awaited inauguration of the new hospital.  
 (b) arriving there on Saturday for the inauguration of the much-awaited new hospital.  
 (c) arriving there for the inauguration of the much awaited new hospital on Saturday.  
 (d) and arrived here on Saturday for the long awaited inauguration of the new hospital.

71. After trying to convince him for a long time, I realized that he was one of those people who never listens to reason.  
(a) he was one of those people who never listen to reason.  
(b) he was one of those people who never listen to reasoning.  
(c) he is one of those people who never listen to reason.  
(d) he is one of those people who never listens to reason.

72. The number of children seeking admission to this college has risen sharply this year, even though it may be only temporarily.  
(a) even though the rise may be only temporary.  
(b) but it may be a temporary rise only.  
(c) but the rise may be only temporary.  
(d) but such a rise may only be a short lived one.

**Directions (73–76) :** Each of the following questions contains a small paragraph. Read the paragraph carefully and complete the sentence given below each.

73. The consumption of harmful drugs by the people can be prevented not only by banning their sale in the market but also by instructing users about their dangerous effects which they must understand for their safety. Also the drug addicts may be provided with proper medical facilities for their rehabilitation. This will help in scaling down the use of drugs.

The passage best supports the statement that consumption of harmful drugs :

- (a) is on increase in the society.  
(b) is due to lack of medical facilities.  
(c) can always be reduced.  
(d) can be eliminated with the help of banning their sale.
74. The school has always been the most important means of transferring the wealth of tradition from one generation to the next. This applies today in an even higher degree than in former times for, through the modern development of economy, the family as bearer of tradition and education has become weakened.

This passage best supports the statement that for transferring the wealth of tradition from one generation to the next :

- (a) there are means other than the school.  
(b) economic development plays a crucial role.  
(c) several different sources must be tried.  
(d) modern technology must be put to use.
75. One of the important humanitarian by-products of technology is the greater dignity and value that it imparts to human labour. In a highly industrialized society, there is no essential difference between Brahmin and Dalit, Muslim and Hindu; they are equally useful and hence equally valuable, for in the industrial society individual productivity fixes the size of the pay cheque and this fixes social status.

The passage best supports the statement that :

- (a) technology decides individual's social status.  
(b) human labour has dignity and value.  
(c) castes and religions are man made.  
(d) all individuals, irrespective of caste and creed, are born equal.
76. There is a shift in our economy from a manufacturing to a service orientation. The increase in service-sector will require the managers to work more with people rather than with objects and things from the assembly line. This passage best supports the statement that :
- (a) managers should have a balanced mind.  
(b) interpersonal skills will become more important in the future work place.

- (c) assembly line will exist in service organizations.  
(d) manufacturing organizations ignore importance of people.

**Directions (77–80) :** In each of the questions below four sentences are given which are denoted by (A), (B), (C) and (D). By using all the four sentences you have to frame a meaningful paragraph. Choose the correct order of the sentences from the four alternatives.

77. (A) You would be very surprised indeed to find it hot.  
(B) Cold, of course.  
(C) And yet that was what I found when I visited North Island, the northern part of New Zealand.  
(D) When you go bathing in a river or a pond, do you expect the water to be hot or cold?  
(a) ACBD  
(b) CABD  
(c) ACDB  
(d) DBAC
78. (A) Because, if the manager's subordinates are inefficient and ineffective and are not helped to increase their efficiency and effectiveness, the task may not be achieved.  
(B) This must be just as true as the responsibility for achieving his prescribed tasks.  
(C) If it is achieved it is at too great a cost, or at the risk of other effects, many of which are less obvious.  
(D) It is often and that one of the prime responsibilities of a manager is the training and development of his staff.  
(a) ADDB  
(b) CABD  
(c) BDAC  
(d) DBAC
79. (A) Modern research, however, has proved that there were invaders even before the Aryans poured into this land.  
(B) It was thought that they came to a country which was uncivilized and barbarian.  
(C) They had evolved a civilization higher than that of the Aryan hordes who came in their wake.  
(D) Till recently the Aryans were regarded as the earliest invaders of the land.  
(a) ABCD  
(b) BCAD  
(c) BDAC  
(d) DBAC
80. (A) Organizations today are becoming increasingly populated by youthful, highly skilled, highly educated workers.  
(B) Two of the most prevalent and provocative organizational dynamics of our time are the themes of participation and change.  
(C) These demands for participation are creating pressures for internal organizational change which are matched only by external environmental pressures for organizational change.  
(D) These young, skilled and educated workers bring with them demands for a voice in the determination of their own organizational destiny—a chance to participate in those decisions which affect their organizational lives.  
(a) ABDC  
(b) BADC  
(c) ABCD  
(d) BCDA
81. There are 4 candidates for the post of a lecturer in Mathematics and one is to be selected by votes of 5 men. The number of ways in which the votes can be given is :  
(a) 1048  
(b) 1072  
(c) 1024  
(d) None of these



82. The number of ways in which 6 men and 5 women can dine at a round table if no two women are to sit together is given by :  
 (a)  $6! \times 5!$   
 (b)  $5! \times 4!$   
 (c) 30  
 (d)  $7! \times 5!$
83. A student is to answer 10 out of 13 questions in an examination such that he must choose at least 4 from the first five questions. The number of choices available to him is :  
 (a) 140  
 (b) 280  
 (c) 196  
 (d) 346
84. A club consists of members whose ages are in A.P., the common difference being 3 months. If the youngest member of the club is just 7 years old and the sum of the ages of all the members is 250 years, then the number of members in the club are :  
 (a) 15  
 (b) 20  
 (c) 25  
 (d) 30
85. A metal cube of edge 12 cm is melted and formed into three smaller cubes. If the edges of two smaller cubes are 6 cm and 8 cm, find the edge of the third smaller cube.  
 (a) 10 cm  
 (b) 14 cm  
 (c) 12 cm  
 (d) 16 cm
86. A well has to be dug out that is to be 22.5m deep and of diameter 7 m. Find the cost of plastering the inner curved surface at Rs. 3 per sq. metre.  
 (a) Rs. 1465  
 (b) Rs. 1485  
 (c) Rs. 1475  
 (d) Rs. 1495
87. Water flows out through a circular pipe whose internal diameter is 2 cm, at the rate of 6 metres per second into a cylindrical tank, the radius of whose base is 60 cm. By how much will the level of water rise in 30 minutes?  
 (a) 2 m  
 (b) 4 m  
 (c) 3 m  
 (d) 5 m
88. A ladder 15 m long reaches a window which is 9 m above the ground on one side of a street. Keeping its foot at the same point, the ladder is turned to the other side of the street to reach a window 12 m high. Find the width of the street.  
 (a) 19 m  
 (b) 21 m  
 (c) 20 m  
 (d) 22 m
89. The horizontal distance between two trees of different heights is 60 m. The angle of depression of the top of the first tree when seen from the top of the second tree is  $45^\circ$ . If the height of the second tree is 80 m, find the height of the first tree.  
 (a) 20 m  
 (b) 22 m  
 (c) 18 m  
 (d) 16 m
90. The number of ways in which a committee of 3 ladies and 4 gentlemen can be appointed from a meeting consisting of 8 ladies and 7 gentlemen, if Mrs. X refuses to serve in a committee if Mr. Y is its member, is :  
 (a) 1960  
 (b) 3240  
 (c) 1540  
 (d) None of these
91. An aeroplane flying at a height of 300 metres above the ground passes vertically above another plane at an instant when the angles of elevation of the two planes from the same point on the ground are  $60^\circ$  and  $45^\circ$ , respectively. Then the height of the lower plane from the ground, in metres, is :  
 (a)  $100\sqrt{3}$   
 (b) 50  
 (c)  $100/\sqrt{3}$   
 (d)  $150(\sqrt{3}+1)$
92. A person standing on the bank of a river observes that the angle of elevation of the top of a tree on the opposite bank of the river is  $60^\circ$  and when he retires 40 metres away from the tree the angle of elevation becomes  $30^\circ$ . The breadth of the river is :  
 (a) 40 m  
 (b) 20 m  
 (c) 30 m  
 (d) 60 m
93. A room has 3 lamps. From a collection of 10 light bulbs of which 6 are not good, a person selects 3 at random and puts them in a socket. The probability that he will have light, is :  
 (a) 5/6  
 (b) 1/2  
 (c) 1/6  
 (d) None of these
94. Out of 13 applicants for a job, there are 5 women and 8 men. It is desired to select 2 persons for the job. The probability that atleast one of the selected person will be a woman is :  
 (a) 25/39  
 (b) 5/13  
 (c) 14/39  
 (d) 10/13
95. The probability that a certain electronic component fails when first used is 0-10. If it does not fail immediately, the probability that it lasts for one year is 0.99. The probability that a new component will last for one year is :  
 (a) 0.891  
 (b) 0.92  
 (c) 0.692  
 (d) None of these
96. A circular grassy plot of land, 42 m in diameter, has a path 3.5 m wide running around it on the outside. The cost of gravelling the path at Rs. 4 per square metre is :  
 (a) Rs. 1002  
 (b) Rs. 3002  
 (c) Rs. 2002  
 (d) Rs. 1802
97. A plot of land in the form of a rectangle has a dimension  $240\text{ m} \times 180\text{ m}$ . A drainlet 10 m wide is dug all around it (on the outside) and the earth dug out is evenly spread over the plot, increasing its surface level by 25 cm. The depth of the drainlet is :  
 (a) 1.225 m  
 (b) 1.229 m  
 (c) 1.227 m  
 (d) 1.223 m
98. A rectangular tank is 225 m by 162 m at the base. With what speed must water flow into it through an aperture 60 cm by 45 cm that the level may be raised 20 cm in 5 hours?  
 (a) 5000 m/hr  
 (b) 5400 m/hr  
 (c) 5200 m/hr  
 (d) 5600 m/hr

99. An iron pipe 20 cm long has exterior diameter equal to 25 cm. If the thickness of the pipe is 1 cm, the whole surface of the pipe is :  
 (a) 3068 cm<sup>2</sup>  
 (b) 3268 cm<sup>2</sup>  
 (c) 3168 cm<sup>2</sup>  
 (d) 3368 cm<sup>2</sup>
100. At a point on level ground, the angle of elevation of a vertical tower is found to be such that its tangent is  $\frac{5}{12}$ . On walking 192 metres towards the tower, the tangent of the angle of elevation is  $\frac{3}{4}$ . The height of the tower is :  
 (a) 160 m  
 (b) 180 m  
 (c) 170 m  
 (d) 190 m
101. A man on the top of a vertical tower observes a car moving at a uniform speed coming directly towards it. If it takes 12 minutes for the angle of depression to change from 30° to 45°, how soon after this, will the car reach the tower?  
 (a) 14 minutes 23 seconds  
 (b) 16 minutes 23 seconds  
 (c) 15 minutes 23 seconds  
 (d) 17 minutes 23 seconds
102. A school has 4 sections of Chemistry in Class X having 40, 35, 45 and 42 students. The mean marks obtained in Chemistry test are 50, 60, 55 and 45 respectively for the 4 sections. Determine the overall average of marks per student.  
 (a) 50.25  
 (b) 52.25  
 (c) 51.25  
 (d) 53.25
103. The average score of boys in an examination of a school is 71 and that of girls is 73. The average score of the school in that examination is 71.8. Find the ratio of the number of boys to the number of girls that appeared in the examination.  
 (a) 2 : 2  
 (b) 4 : 2  
 (c) 3 : 2  
 (d) 1 : 2
104. Company C sells a line of 25 products with an average retail price of Rs. 1,200. If none of these products sells for less than Rs. 420 and exactly 10 of the products sell for less than Rs. 1,000, what is the greatest possible selling price of the most expensive products?  
 (a) Rs. 2,600  
 (b) Rs. 7,800  
 (c) Rs. 3,900  
 (d) Rs. 11,800
105. A sink contains exactly 12 litres of water. If water is drained from the sink until it holds exactly 6 litres of water less than the quantity drained away, how many litres of water were drained away?  
 (a) 2 (b) 6  
 (c) 3 (d) 9
106. A chemist has 10 litres of a solution that is 10 per cent nitric acid by volume. He wants to dilute the solution to 4 per cent strength by adding water. How many litres of water must be added?  
 (a) 15 (b) 20  
 (c) 18 (d) 25
107. A company received two shipments of ball bearings. In the first shipment, 1 per cent of the ball bearings were defective. In the second shipment, which was twice as large as the first, 4.5 per cent of the ball bearings were defective. If the company received a total of 100 defective ball bearings, how many ball bearings were there in the first shipment?  
 (a) 990  
 (b) 2,000  
 (c) 1,000  
 (d) 3,000
108. In a certain laboratory, chemicals are identified by a color coding system. There are 20 different chemicals. Each one is coded with either a single color or a unique two color pair. If the order of colors in the pairs doesn't matter, what is the minimum number of different colors needed to code all 20 chemicals with either a single color or a unique pair of colors?  
 (a) 5 (b) 7  
 (c) 6 (d) 20
109. Population of a district is 2,96,000 out of which 1,66,000 are males. 50% of the population is literate. If 70% males are literate, the number of women, who are literate, is ?  
 (a) 32,200  
 (b) 31,800  
 (c) 66,400  
 (d) 48,000
110. A train covers 180 km distance in 4 hours. Another train covers the same distance in 1 hour less. What is the difference in the distance covered by these trains in one hour?  
 (a) 45 km  
 (b) 9 km  
 (c) 40 km  
 (d) None of these
111. Speed of a speed-boat when moving in the direction perpendicular to the direction of the current is 16 km/hr, speed of the current is 3 km per hour. So the speed of the boat against the current will be (in km/hr) :  
 (a) 22  
 (b) 9.5  
 (c) 10  
 (d) None of these
112. R and S start walking towards each other at 10 A.M. at speeds of 3 km per hour and 4 km per hour respectively. They were initially 17.5 km apart. At what time do they meet?  
 (a) 2 : 30 P.M.  
 (b) 11 : 30 P.M.  
 (c) 1 : 30 P.M.  
 (d) 12 : 30 P.M.
113. A shopkeeper marks up his goods to gain 35%. But he allows 10% discount for cash payment. His profit on the cash transaction therefore, in percentage, is :  
 (a)  $13\frac{1}{2}$  (b) 25  
 (c)  $21\frac{1}{2}$  (d)  $31\frac{1}{2}$
114. A can do 50% more work as B can do in the same time. B alone can do a piece of work in 20 hours. A, with the help of B, can finish the same work in how many hours?  
 (a) 12  
 (b) 8  
 (c)  $13\frac{1}{3}$   
 (d)  $5\frac{1}{2}$

115. Profits of a business are distributed among three partners A, B and C in such a way that 4 times that amount received by A is equal to 6 times the amount received by B and 11 times the amount received by C. The ratio in which the three received the amount is :  
 (a) 4 : 6 : 11  
 (b) 11 : 6 : 4  
 (c)  $\frac{1}{4} : \frac{1}{6} : \frac{1}{11}$   
 (d) 66 : 44 : 24
116. A train covered a certain distance at a uniform speed. If the train had been 6 km/h faster, it would have taken 4 hours less than the scheduled time. And, if the train were slower by 6 km/h, the train would have taken 6 hours more than the scheduled time. The length of the journey is :  
 (a) 700 km  
 (b) 740 km  
 (c) 720 km  
 (d) 760 km
117. Students of a class are made to stand in rows. If 4 students are extra in each row, there would be 2 rows less. If 4 students are less in each row, there would be 4 more rows. The number of students in the class is :  
 (a) 90  
 (b) 94  
 (c) 92  
 (d) 96
118. A part of monthly expenses of a family is constant and the remaining varies with the price of wheat. When the rate of wheat is Rs. 250 a quintal, the total monthly expenses of the family are Rs. 1000 and when it is Rs. 240 a quintal, the total monthly expenses are Rs. 980. Find the total monthly expenses of the family when the cost of wheat is Rs. 250 a quintal.  
 (a) Rs. 1000  
 (b) Rs. 1400  
 (c) Rs. 1200  
 (d) Rs. 800
119. A plane left 30 minutes later than the scheduled time and in order to reach the destination 1500 km away in time, it had to increase the speed by 250 km/h from the usual speed. Find its usual speed :  
 (a) 720 km/h  
 (b) 740 km/h  
 (c) 730 km/h  
 (d) 750 km/h
120. A metallic sheet is of rectangular shape with dimensions 48 cm × 36 cm. From each one of its corners, a square of 8 cm is cut off. An open box is made of the remaining sheet. Find the volume of the box.  
 (a) 5110 cm<sup>3</sup>  
 (b) 5130 cm<sup>3</sup>  
 (c) 5120 cm<sup>3</sup>  
 (d) 5140 cm<sup>3</sup>

**Directions (121–125) :** In each of the problems, two statements containing certain data follow a question. Determine whether the data provided by the statements are sufficient to answer the question. Choose the correct answer based upon the statements, data, your knowledge of mathematics, and your familiarity with everyday facts.

Mark your answer as :

- (a) if statement (A) by itself is sufficient to answer the question, but statement (B) by itself is not;  
 (b) if statements (A) and (B) taken together are sufficient to answer the question, even though neither statement by itself is sufficient;

- (c) if statement (B) by itself is sufficient to answer the question, but statement (A) by itself is not;  
 (d) if either statement by itself is sufficient to answer the question.

121. Does rectangle A have a greater perimeter than rectangle B?  
 (A) The length of a side of rectangle A is twice the length of a side of rectangle B.  
 (B) The area of rectangle A is twice the area of rectangle B.
122. If there is an average of 250 words on each page, how many pages can Michael read in an hour?  
 (A) There is an average of 25 ten-word lines on each page.  
 (B) Michael can read 30 ten-word lines per minutes.
123. If he did not stop along the way, what speed did Bill average on his 3 hour trip?  
 (A) He travelled a total of 120 miles.  
 (B) He travelled half the distance at 30 miles per hour and half the distance at 60 miles per hour.
124. On a certain construction crew there are 3 carpenters for every 2 painters. What per cent of the entire crew are carpenters or painters?  
 (A) Eighteen per cent of the crew are carpenters.  
 (B) Twelve per cent of the crew are painters.
125. Are of least 20 per cent of the people in City H who are 30 years old or older bilingual?  
 (A) In City H, 30 per cent of the population is at least 30 years old.  
 (B) In City H, of the population 30 years old or older, 18 per cent of the women and 17 per cent of the men are bilingual.

**Directions (126–130) :** The forecasts of the World and Asian energy demand for the years 2005, 2010 and 2020 are given in the table. The demand is given in million barrels per day crude oil equivalent.

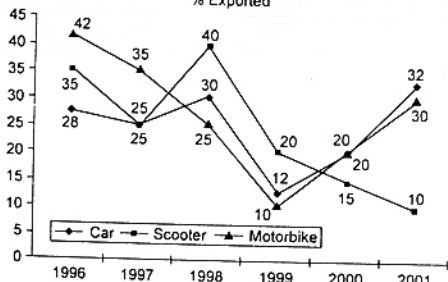
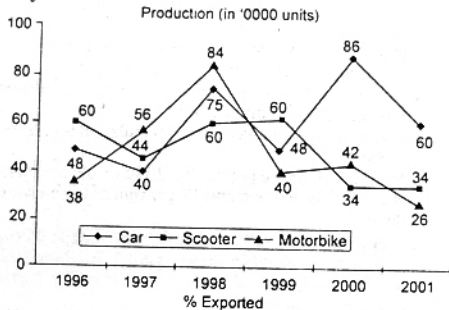
	2005		2010		2020	
	World	Asia	World	Asia	World	Asia
Petroleum	56·0	8·0	86·0	11·5	108·0	18·0
Natural Gas	38·0	1·5	67·0	2·5	96·0	4·5
Solid fuels	46·0	6·0	54·0	13·0	67·0	15·4
Nuclear	8·0	2·0	9·0	4·8	12·0	5·5
Hydropower	12·0	1·5	14·0	2·2	17·0	4·6
<b>Total</b>	<b>160·0</b>	<b>19·0</b>	<b>230·0</b>	<b>34·0</b>	<b>300·0</b>	<b>48·0</b>

126. Which is the fuel whose proportion in the total energy demand will increase continuously over the period 2005-2020 in Asia?  
 (a) Natural Gas  
 (b) Both Natural Gas and Hydropower  
 (c) Hydropower  
 (d) None of these
127. Which is the fuel whose proportion in the total energy demand will remain unaltered from 2005 to 2010 in Asia?  
 (a) Petroleum  
 (b) Solid fuels  
 (c) Natural Gas  
 (d) Nuclear
128. For which source of energy is the demand in 2020 as a ratio of demand in 2005 in the Asian region the greatest?  
 (a) Natural Gas  
 (b) Nuclear  
 (c) Solid fuels  
 (d) Hydropower

129. Which is the fuel for which demand in the rest of the world (excluding Asia) as a proportion of total energy demand of the world (including Asia) shows continuous decrease over the period?  
 (a) Solid fuels and Natural Gas  
 (b) Hydropower and Petroleum  
 (c) Solid fuels and Hydropower  
 (d) None of these

130. Over 2005-2020, which two fuels meet more than 60 per cent of the total energy demand of the world and Asia both?  
 (a) Nuclear and Hydropower  
 (b) Nuclear and Solid fuels  
 (c) Hydropower and Solid fuels  
 (d) None of these

Directions (131–135) : Study the following line graphs which show the production (in, 0000 units) and percentage exported of scooters, motorbikes and cars respectively over the years.

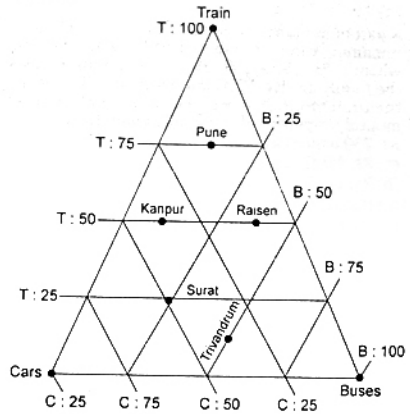


131. In which of the following years was the production of cars more than 50% of the total production?  
 (a) 2000  
 (b) 2001  
 (c) 1998  
 (d) 1996
132. Find the total number of automobiles exported in the year 1999 :  
 (a) 2,27,600  
 (b) 2,07,600  
 (c) 2,17,600  
 (d) 2,20,000
133. Find the ratio of cars, scooters and motorbikes exported in 1996 :  
 (a) 25 : 16 : 19  
 (b) 16 : 25 : 19

- (c) 19 : 16 : 25  
 (d) 6 : 5 : 1

134. If the ratio of export prices of a car, scooter and motorbike was 2 : 1 : 1.5 in 1998, what was the proportion of their export earnings?  
 (a) 4 : 2 : 3  
 (b) 6 : 1 : 21  
 (c) 30 : 16 : 23  
 (d) Cannot be determined
135. In which of the following years was the production of motorbikes exactly 40% of the total production of automobiles in that year?  
 (a) 1997  
 (b) 2000  
 (c) 1999  
 (d) 1996

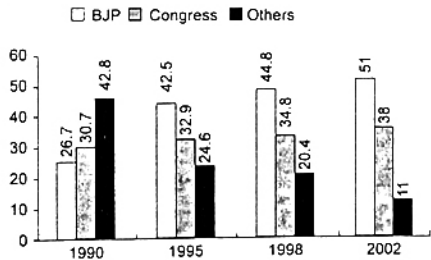
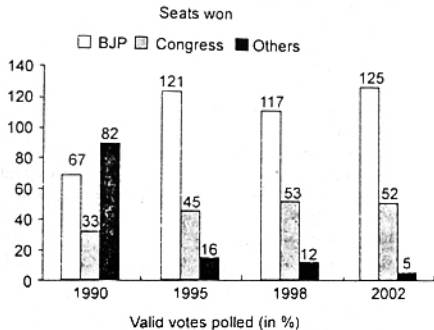
Directions (136–140) : A survey was conducted in five cities viz. Pune, Kanpur, Raisen, Surat and Trivandrum, for the percentage of people using T (trains), B (buses), C (cars) as modes of transport number of persons surveyed in the cities Pune, Kanpur, Raisen, Surat and Trivandrum are 2000, 4000, 6000, 3000 and 8000 respectively. Refer to the data in the triangular bar diagram to answer the questions that follow.



136. The city where the least number of persons uses buses is :  
 (a) Surat  
 (b) Raisen  
 (c) Kanpur  
 (d) Pune
137. The average number of persons using trains for transportation in Pune, Kanpur, Raisen, and Trivandrum is :  
 (a) 1880  
 (b) 1750  
 (c) 1950  
 (d) None of these
138. The mode of transport used by the least number of persons in all the given cities :  
 (a) trains  
 (b) buses  
 (c) cars  
 (d) cars and buses
139. Among the given five cities, the cities who less than 30% of the people use cars in transport are :  
 (a) Kanpur and Trivandrum

- (b) Pune, Kanpur and Raisen  
 (c) Pune and Raisen  
 (d) Pune, Kanpur and Surat
140. Which of the following statements is *not* true?  
 (a) 50% of the people use trains for transport in the cities Kanpur and Raisen.  
 (b) In city Trivandrum, more than 50% of the people use cars for transport  
 (c) More percentage of people use buses for transport in the city Surat than in the city Pune.  
 (d) In city Raisen, there are more percentage of people using trains for transport than buses.

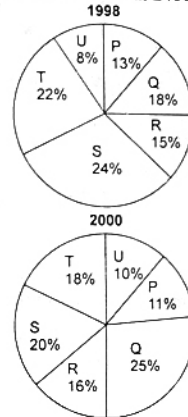
**Directions (141–145) :** Study the graphs which show the seats won the percentage of valid votes polled for different political parties in Gujarat over the years.



141. If the total number of valid votes in 2002 Gujarat election was 5 crore then, find the average number of votes for winning one seat for other political parties :  
 (a) 11 lakh (b) 1·10 lakh  
 (c) 1·10 crore (d) Data is inadequate
142. In which of the following years was the number of seats won by BJP maximum with respect to the previous given year?  
 (a) 1998 (b) 1995  
 (c) 2002 (d) 1995 and 2002
143. In 1998, if 2·24 crore people votes were valid for BJP, whereas in 1990 there were 1·228 crore people votes valid for Congress by what percent was the number of valid votes less in 1990 with respect to that in 1998?  
 (a) 20% (b) 24%  
 (c) 30% (d) 25%
144. In which of the following years did the BJP secure more than  $66\frac{2}{3}$  % of the total seats?  
 (a) 1990  
 (b) 1998  
 (c) 1995

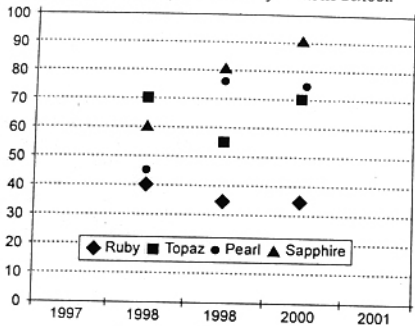
- (d) 2002
145. In which of the following years, was the difference in the number of valid votes for any two political parties the maximum?  
 (a) 1990  
 (b) 1998  
 (c) 1995  
 (d) Cannot be determined

**Directions (146–150) :** Study the following graphs which show the number of workers of different categories of a factory for two different years. The total number of workers in 1998 was 2000 and in 2000 was 2400.



146. In which of the categories is the number of workers same in both the years?  
 (a) P  
 (b) S  
 (c) R  
 (d) T
147. Find the percentage increase in the number of workers in category U in 2000 :  
 (a) 25%  
 (b)  $33\frac{1}{3}$  %  
 (c) 50%  
 (d)  $66\frac{2}{3}$  %
148. What is the total number of increased workers for the categories in which the number of workers has been increased?  
 (a) 468 (b) 382  
 (c) 408 (d) 168
149. Which categories have shown decrease in the number of workers from 1998 to 2000?  
 (a) P  
 (b) Q  
 (c) R  
 (d) T
150. Find the maximum difference between the number of workers of any two categories taken together for any one year and that of any two for the other year.  
 (a) 660  
 (b) 416  
 (c) 636  
 (d) 502

**Directions (151–155) :** The scatter diagram shows the number of students passing in the high school examination in the given years from the four houses of a Public School.



151. The average number of students for each house who have passed in the given years is :  
 (a) 59  
 (b) 52  
 (c) 63  
 (d) 56
152. The performance for which of the following houses is the best?  
 (a) Pearl  
 (b) Ruby  
 (c) Topaz  
 (d) Sapphire
153. For which of the following houses is the percentage change in the results maximum for any year over the previous year?  
 (a) Topaz  
 (b) Pearl  
 (c) Sapphire  
 (d) Ruby
154. If the trend observed between 1999 and 2000 continues in the next year, what will be the number of students passing the examination in 2001?  
 (a) 245  
 (b) 237  
 (c) 263  
 (d) 255
155. The number of students keeps on increasing by 50 every year. In 1998, there were 250 students. For which of the following years is the performance best in the school?  
 (a) 1998  
 (b) 2000  
 (c) 1999  
 (d) Cannot be determined

**Directions (156–160) :** Each of the following questions has two statements labeled as [A] and [B].

**Mark the answer as :**

- (a) If statement A by itself is sufficient to answer the question.  
 (b) If statement B by itself is sufficient to answer the question.  
 (c) If both the statements A and B taken together are sufficient to answer the question but neither statement by itself is sufficient.  
 (d) If statements A and B taken together are not sufficient to answer the question and more data is required.

156.  $x > y$ . Is  $(a + 2b + 3c)^2 > (a - 2b - 3c)^2$ ?  
 [A]  $x = a + 2b + 3c$ .  
 [B]  $y = a - 2b - 3c$
157.  $x, y > 0$ . Is  $2^x > 3^y$ ?  
 [A]  $x > 2y$   
 [B]  $x \geq y + 3$ .
158. Is quadrilateral PQRS a rectangle?  
 [A] It is a parallelogram.  
 [B] It is a square.
159. A is green if and only if B is white, and at the same time C is yellow. Is A green?  
 [A] C is yellow  
 [B] B is white.
160. Is Q an integer?  
 [A]  $P + Q$  is an even integer.  
 [B]  $P - Q$  is an even integer.
161. Captain Cook is the registered brand name of :  
 (a) DCW Home Products Ltd.  
 (b) OATS from USA  
 (c) Hindustan Lever Ltd.  
 (d) TATA
162. Cherry is a registered brand name of :  
 (a) Hindustan Lever Ltd. (b) Procter & Gamble  
 (c) Reckitt & Colman (d) None of these
163. CRR stands for :  
 (a) Cash Rate Requirements  
 (b) Cash Reserve Requirements  
 (c) Credit Rate Requirements  
 (d) Credit Reserve Requirements
164. The human face has.....number of bones.  
 (a) 10  
 (b) 4  
 (c) 14  
 (d) 20
165. Which is the Indian company to be listed on the NASDAQ?  
 (a) Infosys Technology  
 (b) Satyam Infoway  
 (c) ICICI Bank  
 (d) TCS
166. 'Onomatopoeic' words are the :  
 (a) words that read the same backwards as well as forwards e.g. madam.  
 (b) words that sound like the noise they describe e.g. meow, crunch.  
 (c) sets of initials designed to be spoken as though they are words e.g. RADAR, NASA.  
 (d) words that sound same but have different meanings e.g. two, too.
167. 'Bobby' is the nickname of British :  
 (a) teachers  
 (b) lawyers  
 (c) players  
 (d) policemen
168. What does the abbreviation MIDI stands for in computing?  
 (a) Micro Instrumental Dynamic Information  
 (b) Musical Instrument Digital Interface  
 (c) Media Interface Digital Integration  
 (d) Microsoft Interface Definition Input
169. A TI-83 is a :  
 (a) slide rule model  
 (b) old worthless computer  
 (c) scientific calculator  
 (d) Intel processor

170. "For the man who dares to care" is related to :  
(a) Nivea (b) Ponds cream  
(c) Lakme (d) Revlon
171. Alfred Nobel is associated with the invention of :  
(a) cosmic rays  
(b) dynamite  
(c) dynamo  
(d) penicillin
172. Which one of the following does not belong to the list?  
(a) BSF  
(b) CRPF  
(c) RPF  
(d) NCC
173. Who is the Author of Food, Nutrition and Poverty in India ?  
(a) V.K.R.V. Rao  
(b) T.S. Eliot  
(c) Mark Twain  
(d) Evelyn Wauh
174. The world's largest shipping canal is:  
(a) Suez in Egypt  
(b) Panama in America  
(c) Kiel in Germany  
(d) Gota in Sweden
175. Hard Currency is defined as currency:  
(a) which can hardly be used for international transactions  
(b) which is used in times of war  
(c) which loses its value very fast  
(d) traded in foreign exchange market for which demand is persistently relative to the supply
176. The Reserve Bank of India issues:  
(a) all the currency notes  
(b) all the currency notes except the one rupee note  
(c) all the currency notes except the hundred rupee note  
(d) Only notes of Rs. 10 and above denominations
177. Most of the Ajanta paintings were done during the period of :  
(a) Harshavardhana  
(b) Guptas  
(c) Mauryas  
(d) Kush
178. To which country does Mother Theresa originally belong ?  
(a) Italy  
(b) Greece  
(c) Yugoslavia  
(d) Canada
179. Which country in September 2005 lifted a fifty years ban on college students getting married?  
(a) Zambia  
(b) China  
(c) Brazil  
(d) Indonesia
180. 'Beauty and the Beast', 'The Little Mermaid', 'Peter Pan', 'Snow White and Seven Dwarfs' are all famous ... animation classics :  
(a) Walt Disney's  
(b) Warner Bros  
(c) Dream Works'  
(d) Universal's
181. Who among the following became Formula One Race's youngest ever World Champion in Sao Paulo, Brazil on September 25, 2005 when he finished third in the event?  
(a) Kimi Raikkonen  
(b) Fernando Alonso  
(c) Loris Capirossi  
(d) Juan Pablo Montoya
182. Where will first Indoor Asian Games 2007 be held ?  
(a) Italy  
(b) Thailand  
(c) China  
(d) Qatar
183. Where will World Cup Football 2014 be held ?  
(a) Australia  
(b) South Africa  
(c) Germany  
(d) Brazil
184. Where will Tenth South Asian Games be held ?  
(a) Hyderabad  
(b) Colombo  
(c) Bangkok  
(d) Makan
185. Classical Dance Mando comes from the state of :  
(a) Goa  
(b) Bihar  
(c) Himachal Pradesh  
(d) Orissa
186. Classical Dance Nati comes from the state of :  
(a) Goa  
(b) Bihar  
(c) Himachal Pradesh  
(d) Orissa
187. The President has the power to remove all the following except :  
(a) Attorney General of India  
(b) Governor of a State  
(c) Council of Ministers  
(d) Chairman of a State Public Service Commission on the report of Supreme Court
188. Which of the following does the president not appoint ?  
(a) Finance Commission  
(b) Planning Commission  
(c) Commission on Official Languages  
(d) UPSC
189. Who has been appointed new President of Editors Guild?  
(a) Jacob Mathew  
(b) Shobhana Bharatia  
(c) M.J. Akbar  
(d) Vineet Jain
190. International Monetary Fund (IMF) projected India's economy to grow by how much per cent in 2005?  
(a) 6.6%  
(b) 7.1%  
(c) 7.3%  
(d) 6.9%
191. Which country is the largest trading partner of India?  
(a) China (b) USA  
(c) UK (d) Mauritius
192. Recently with the Tourism and Commerce Marketing Department of which country has Confederation of Indian Industry signed a MoU?  
(a) Britain (b) France  
(c) Dubai (d) Australia
193. Why was Ali Ahmad Jalali in news recently? He is/was :  
(a) Prime Minister of Iraq visited India  
(b) Interior Minister of Afghanistan resigned  
(c) Elected new President of Egypt.  
(d) Water Resource Minister of Bangladesh visited India.

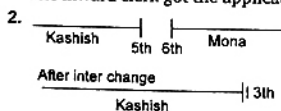
194. At which place will Gas Authority of India Limited (GAIL) setup a gas based petro-chemical project of Rs. 7000 crores ?  
 (a) Kochi  
 (b) Coimbatore  
 (c) Chittur  
 (d) Raichoti
195. Who is the new director of C.B.I. ?  
 (a) Vijay Shankar  
 (b) U.S. Mishra  
 (c) Navdip Sodhi  
 (d) Pradeep Singh
196. The Reserve Bank of India has asked the banks by which month to finalise vendors for their Cheque Transaction System which allows transferring the electronic image instead of physical movements of the cheque?  
 (a) September (b) November  
 (c) October (d) December
197. Which of the following banks has recently launched a website for farmers?  
 (a) Punjab National Bank  
 (b) State Bank of India  
 (c) Allahabad Bank  
 (d) Oriental Bank of Commerce
198. Which bank become First Public Sector Bank to begin online trading service, which begin from December 2005?  
 (a) State Bank of India (b) Union Bank of India  
 (c) Punjab National Bank (d) Bank of Maharashtra
199. Which gulf country has recently launched a stock exchange, the first ever in this region?  
 (a) Qatar  
 (b) Dubai  
 (c) U.A.E  
 (d) Oman
200. What is the rank of Kumar Mangalam Birla of India in the Fortune Magazine's forty most wealthiest people of the world of age less than forty years?  
 (a) Twelfth  
 (b) Fifteenth  
 (c) Eighth  
 (d) Fifth

**ANSWERS**

- |          |          |          |          |          |          |          |          |          |          |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1. (b)   | 2. (b)   | 3. (d)   | 4. (c)   | 5. (d)   | 6. (a)   | 7. (b)   | 8. (a)   | 9. (b)   | 10. (b)  |
| 11. (a)  | 12. (c)  | 13. (d)  | 14. (a)  | 15. (d)  | 16. (b)  | 17. (d)  | 18. (a)  | 19. (b)  | 20. (c)  |
| 21. (b)  | 22. (c)  | 23. (b)  | 24. (a)  | 25. (b)  | 26. (c)  | 27. (a)  | 28. (a)  | 29. (d)  | 30. (b)  |
| 31. (b)  | 32. (b)  | 33. (c)  | 34. (d)  | 35. (d)  | 36. (a)  | 37. (b)  | 38. (d)  | 39. (b)  | 40. (a)  |
| 41. (b)  | 42. (a)  | 43. (c)  | 44. (b)  | 45. (d)  | 46. (d)  | 47. (a)  | 48. (d)  | 49. (c)  | 50. (c)  |
| 51. (c)  | 52. (d)  | 53. (c)  | 54. (a)  | 55. (c)  | 56. (a)  | 57. (a)  | 58. (d)  | 59. (b)  | 60. (c)  |
| 61. (b)  | 62. (d)  | 63. (d)  | 64. (d)  | 65. (a)  | 66. (a)  | 67. (b)  | 68. (b)  | 69. (c)  | 70. (a)  |
| 71. (b)  | 72. (c)  | 73. (c)  | 74. (a)  | 75. (d)  | 76. (b)  | 77. (d)  | 78. (d)  | 79. (d)  | 80. (b)  |
| 81. (d)  | 82. (b)  | 83. (a)  | 84. (c)  | 85. (a)  | 86. (b)  | 87. (c)  | 88. (b)  | 89. (a)  | 90. (d)  |
| 91. (a)  | 92. (b)  | 93. (d)  | 94. (a)  | 95. (a)  | 96. (c)  | 97. (c)  | 98. (b)  | 99. (a)  | 100. (b) |
| 101. (b) | 102. (b) | 103. (c) | 104. (d) | 105. (d) | 106. (a) | 107. (c) | 108. (c) | 109. (b) | 110. (d) |
| 111. (c) | 112. (d) | 113. (c) | 114. (b) | 115. (c) | 116. (c) | 117. (d) | 118. (c) | 119. (d) | 120. (c) |
| 121. (c) | 122. (c) | 123. (d) | 124. (d) | 125. (c) | 126. (d) | 127. (c) | 128. (d) | 129. (c) | 130. (d) |
| 131. (a) | 132. (b) | 133. (b) | 134. (c) | 135. (a) | 136. (d) | 137. (d) | 138. (b) | 139. (c) | 140. (b) |
| 141. (d) | 142. (b) | 143. (a) | 144. (b) | 145. (b) | 146. (b) | 147. (c) | 148. (c) | 149. (d) | 150. (a) |
| 151. (a) | 152. (d) | 153. (b) | 154. (d) | 155. (a) | 156. (d) | 157. (a) | 158. (b) | 159. (c) | 160. (c) |
| 161. (a) | 162. (c) | 163. (b) | 164. (c) | 165. (a) | 166. (b) | 167. (d) | 168. (b) | 169. (c) | 170. (a) |
| 171. (b) | 172. (d) | 173. (a) | 174. (a) | 175. (d) | 176. (b) | 177. (b) | 178. (c) | 179. (b) | 180. (a) |
| 181. (b) | 182. (c) | 183. (d) | 184. (b) | 185. (a) | 186. (c) | 187. (c) | 188. (b) | 189. (c) | 190. (b) |
| 191. (b) | 192. (c) | 193. (b) | 194. (a) | 195. (a) | 196. (c) | 197. (a) | 198. (b) | 199. (b) | 200. (c) |

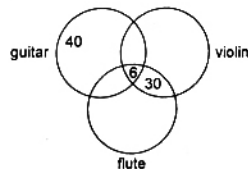
**Solution**

1. The senior clerk got the application on Friday.  
 The inward clerk got the application on Wednesday.



Hence there are 8 students between them.

7.







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