

# OPENMAT (XII) ENTRANCE TEST FOR MANAGEMENT PROGRAMMES 2003

## TEST I GENERAL AWARENESS

1. Which of the following countries is *not* a member of the G-8 Group?  
(1) France (2) Italy  
(3) Spain (4) Germany
2. Sariska and Ranthambhore are the reserves for which of the following animals?  
(1) Lion (2) Deer  
(3) Tiger (4) Bear
3. Which Article of the Constitution of India gives precedence to constitutional provision over the laws made by the Union Parliament/Sate Legislatures?  
(1) 13 (2) 32  
(3) 245 (4) 326
4. 'APSARA' is the name of India's first  
(1) Nuclear Reactor  
(2) Helicopter  
(3) Ground Battle Tank  
(4) Railway Locomotive
5. Which of the following countries has the second largest rail network in the world?  
(1) India (2) USA  
(3) Russia (4) China
6. Gandhi Peace Prize for the year 2000 was awarded to the former President of South Africa along with  
(1) C. Subramaniam  
(2) Grameen Bank of Bangladesh  
(3) Satish Dhawan  
(4) World Health Organisation
7. Which of the following is *not* a part of vehicular pollution?  
(1) Sulphur dioxide (2) Nitrogen oxide  
(3) Carbon monoxide (4) Hydrogen peroxide
8. The 'World Environment Day' is celebrated on  
(1) June 5th (2) June 4th  
(3) July 5th (4) July 4th
9. The theme of the World Development Report 2001 is  
(1) From plan to market  
(2) Knowledge for development  
(3) Attacking poverty  
(4) The state in the changing world
10. The Indian National Army (INA) came into existence in 1943 in  
(1) Japan (2) Then Burma  
(3) Singapore (4) Then Malaya
11. The Asian Games have been held in New Delhi  
(1) Once (2) Twice  
(3) Thrice (4) Four times
12. The Famous book '*Anandmath*' has been authored by  
(1) Rabindranath Tagore  
(2) Bankim Chandra Chattopadhyaya  
(3) Sarojini Naidu  
(4) Sri Aurobindo
13. SAARC declared the decade 1991-2000 as the Decede of  
(1) Youth (2) Family  
(3) Literacy (4) Girl Child
14. Army Day is celebrated in India every year on  
(1) 1st January (2) 15th January  
(3) 1st February (4) 15th February
15. The first Indian-American Woman to go into space was  
(1) Harbans Kaur (2) Kalpana Chawla  
(3) Jyotirmoyee Sikdar (4) Bachhendri Pal
16. The main occupation of the people of Indus Valley Civilization was  
(1) Trade (2) Cattle rearing  
(3) Huntin (4) Agriculture
17. The term 'Golden Quadrangle' refers to :  
(1) The base of the pyramids found in Egyptian Desert  
(2) Four sea-ports identified by the Customs department which are routes for gold smuggling  
(3) National Highways Development Project connecting the four Indian metro-cities  
(4) Rich contiguous wheat growing areas of Punjab, Haryana, U.P. and Rajasthan
18. Which of the following was *not* a centre of learning in ancient India?  
(1) Taxila (2) Vikramshila  
(3) Nalanda (4) Koushambi

19. 'Charak' was the famous court physician of  
 (1) Harsha  
 (2) Chandragupta Maurya  
 (3) Ashoka  
 (4) Kanishka
20. Who among the following Congress leaders was called the 'Grand Old man of India'?  
 (1) Mahatma Gandhi (2) Bal Gangadhar Tilak  
 (3) Dadabhai Naoroji (4) Madan Mohan Malviya
21. The President of the Drafting Committee of the Indian Constitution was  
 (1) Dr. B.R. Ambedkar (2) Jawahar Lal Nehru  
 (3) Dr. Rajendra Prasad (4) J.B. Kriplani
22. Which rock is formed by the deposits of animal shells and skeletons?  
 (1) Sandstone (2) Limestone  
 (3) Phyllite (4) Granite
23. Which of the following pairs is mismatched?  
 (1) Mettur – Kaveri  
 (2) Bhakra Nangal – Sutlej  
 (3) Hirakud – Mahanadi  
 (4) Tehri – Yamuna
24. Which part of the islands in the Arabian Sea is known as Minicoy Islands?  
 (1) Northern (2) Eastern  
 (3) Southern (4) Western
25. Tropical evergreen forests of India are found in  
 (1) Kerala (2) andhra Pradesh  
 (3) Madhya Pradesh (4) Orissa
26. G-15 is  
 (1) an organisation of the developed countries of the world  
 (2) an organisation of the developing countries of the world  
 (3) an organisation of the developed countries of Europe  
 (4) an organisation of developing countries of Asia
27. The birth-rate measures the number of births during a year per  
 (1) 100 of population  
 (2) 1, 000 of ppulation  
 (3) 10,000 of population  
 (4) 1,00,000 of population
28. Fundamental Duties were incorporated in the India Constitution in  
 (1) 1971 (2) 1972  
 (3) 1975 (4) 1976
29. In India, to be recognised as a national party, a party must secure at least  
 (1) 10% of the valid votes in four or more states  
 (2) 4% of the valid votes in four or more states  
 (3) 15% of the valid votes in two states  
 (4) 25% of the valid votes in one state
30. In which year were the first general elections held in India?  
 (1) 1947–48 (2) 1948–49  
 (3) 1950–51 (4) 1951–52

## TEST II

### English Language

**Directions :** For Questions 31 to 45. Read the two passages given below carefully. Each passage is followed by questions based on the contents of the passage. Answer the questions by selecting the best alternative from among those given in the questions.

#### Passage I

India has come a long way since the Bengal Famine of 1943. The food situation in India, once characterised by chronic shortages and the spectre of famines, has changed dramatically over the years. From being the biggest recipient of PL 480 aid during the 1950s and 1960s, India today is relatively self-sufficient in foodgrains at the given level of incomes and prices; in fact, it has marginal surpluses. The General Agreement on Tariffs and Trade (GATT) has been signed, with India as one of the signatories, under which all countries will have to gradually open up their agricultural sectors.

It is, therefore, neither feasible nor desirable to keep India's foodgrains sector insulated from world markets. In fact, this is an appropriate opportunity for India to integrate its agriculture with global agriculture, and make use of private trade (both domestic and foreign) as an important instrument for efficiently allocating her resources as well as providing food security to her people at the lowest economic cost. The time to change gears in food policy has come.

Food security, in a broader context, means that people have physical and economic access to food. Since foodgrains have the largest share in the food basket of the poor in a developing country like India, it is the availability of foodgrains that lies at the heart of the concept of food security. The first step in this direction, therefore, is to make foodgrains physically available to the people. This can be done by augmenting production, or through imports and transportation of grains to people wherever they are.

There are several ways of achieving these targets. One may rely on private entrepreneurship by letting the individual farmers produce, traders trade/import and make it available to consumers far and wide; or the Government may directly intervene in the production and/or the trade process. In the former case, the Government follows policies that provide appropriate market signals while in the latter, it acts as producer, importer and trader itself. Indian policy makers have followed a mix of both these options. For production, they have relied on the farmers while the Government has retained control over imports. For distribution, it created public agencies to do the job along with private trade, thus creating a dual market structure.

Providing economic access to food is the second part of the concept of food security. This can be best obtained by adopting a cost effective technology in production so that the real price of foodgrains come down and more people have access to it. In case it still fails to reach the larger sections of the population, the Government can directly subsidise food for the poor, launch a drive to augment their incomes, or try a combination of the two strategies. India has followed both these policies.

- 31.** India has 'come a long way' means
- (1) many years have passed after the Bengal famine
  - (2) the food position in India is now vastly improved
  - (3) India now handles such problems under PL-480 scheme
  - (4) India has advanced in science and technology
- 32.** Which of the following views regarding GATT, does the author seem to be advocating?
- (1) India should seize the chance and make efforts to fulfil its objectives
  - (2) India should not have signed it, to insulate our foodgrains sector
  - (3) India should have agreed to GATT excluding the agricultural sector
  - (4) India should hand over the issue of foodgrains security to the private sector
- 33.** According to the author, why is it necessary to ensure food security to people?
- (1) In order to sustain economic growth
  - (2) As per the PL-480 guidelines
  - (3) In order to be able to export foodgrains
  - (4) The passage makes no such assertion
- 34.** Which of the following forms the most essential part of the concept of food security in India?
- (1) Availability of affordable technology of food production to poor farmers
  - (2) Availability of all foodgrains in the market for the rural poor
  - (3) Easy access of foodgrains to the weaker sections at affordable prices
  - (4) Providing subsidies on all food items for the rural poor
- 35.** If private agencies are to be entrusted with the task of making foodgrains available to people, what facilitative role should the Government undertake?
- (1) Nationalise all distribution systems
  - (2) Make policies that give the right signals to the market
  - (3) Take responsibility of distribution
  - (4) Make efforts to increase the income of the farmers
- 36.** The author of the passage seems to advocate
- (1) liberalisation and privatisation
  - (2) state controlled, socialistic but closed economy
  - (3) a very practical and pragmatic approach to guard our economy
  - (4) stable international relations
- 37.** According to the author, food at affordable prices could be made available to the poor by
- A. reducing the cost of production of foodgrains by using appropriate technology
  - B. offering foodgrains at lower cost and offering economic support for maintaining low cost
  - C. raising the earnings of the poor
    - (1) only A
    - (2) only B and C
    - (3) only A and C
    - (4) A, B and C
- 38.** By saying Indian policy makers have followed a mix of both options it means that
- (1) production and distribution both have public and private participation
  - (2) production is largely in private hands while distribution is only through public means
  - (3) for production, reliance has been on the private sector while both public and private agencies are mobilised for distribution
  - (4) production and distribution are both private endeavours

## Passage II

The strength of Indian democracy lies in its tradition, in the fusion of the ideas of democracy and national independence, which was the characteristic of the Indian nationalist movement long before Independence. Although the British retained supreme authority in India until 1947, the provincial elections of 1937 provided real exercise in democratic practice before national independence. During the Pacific war, India was not overrun or seriously invaded by the Japanese and after the war was over, the transfer of power to a government of the Indian Congress Party was a peaceful one as far as Britain was concerned. By 1947 'Indianisation' had already gone far in the India Civil Service and Army, so that the new government could start with effective instrument of central control.

After Independence, however, India was faced with two problems; the first, that of economic growth from a very low level of production and the second was that of ethnic diversity and the aspirations of subnationalities. The Congress leadership was more aware of the former problem than of the second; as a new political elite, which had rebelled not only against the British Raj but also against India's old social order, they were conscious of the need to initiate economic development and undertake social reforms, but as nationalists who had led a struggle against the alien on behalf of all parts of India, they took the cohesion of the Indian nation too much for granted and underestimated the centrifugal forces of ethnic division, which were bound to be accentuated rather than diminished as the popular masses were more and more drawn into politics. The Congress Party was originally opposed to the idea of recognizing any division of India on a linguistic basis and preferred to retain the old provinces of British India, which often cut across linguistic boundaries; it was only in response to strong pressures from below that the principle of linguistic states was conceded as the basis for a federal 'Indian Union'. The rights granted to the States created new problems for the Central Government. The idea of making Hindi the national language of a united India was thwarted by the recalcitrance of the speakers of other important Indian languages, and the autonomy of the States rendered central economic planning extremely difficult. Land reforms remained under the control of the States and many large scale economic projects required a degree of cooperation between the Central Government and one or more of the States which it was found impossible to achieve. Coordination of policies was difficult even when the Congress Party was in power both in the States and at the Centre; When a Congress Government in Delhi was confronted with non-Congress parties in office in the States, it became much harder.

39. Choose the word which is most nearly the same in meaning as the word 'thwarted' as used in the passage.
- (1) opposed                      (2) diverted  
(3) implemented                (4) advocated
40. Why, according to the passage, was central economic planning found to be difficult?
- (1) On account of multiplicity of States and Union Territories  
(2) On account of lack of coordination in different Government departments  
(3) On account of autonomy given to the States in certain matters  
(4) On account of lack of will in implementing land reforms
41. Which of the following issues was not appropriately realised by the Central Government?
- (1) Ethnic diversity of the people  
(2) A national language for the country  
(3) Implementation of the formulated policies  
(4) Centre-State relations
42. Which, according to the passage, was an exercise in democratic practice in India before Independence?
- (1) The handing over of power by the British  
(2) The Indianisation of the Indian Civil Service  
(3) The conduct of provincial elections in 1937  
(4) Several democratic institutions created by the India National Congress
43. Which of the following statements is *not* true in the context of the passage?
- (1) The Congress party was originally opposed to the idea of division of states on linguistic basis  
(2) Economic development and social reform were initiated soon after Independence  
(3) The political elite in India rebelled against the British Raj  
(4) The Congress leadership was full conscious of the problems arising out of ethnic diversity in India at the time of Independence
44. The new government could start with effective instrument of central control because the
- (1) process of Indianisation of the Indian Civil Service had already begun  
(2) Indian army was organised on the pattern of the British army  
(3) people of India offered their wholehearted support to the Government  
(4) transfer of power to the Indian Congress Party was peaceful

45. Why was India **not** overrun by Japan during the Pacific war?
- (1) Japan was friendly with the British  
 (2) Japan was interested in India's freedom  
 (3) Japan was doubtful about the success of such attack  
 (4) The passage does not offer any information in this regard

**Directions :** For Questions 46 to 50. Each of these questions consists of a capitalised word followed by four alternatives. From the given alternatives, choose the one that is most similar in meaning to the capitalized word.

46. FEIGN  
 (1) to pretend (2) faint  
 (3) congratulate (4) glow
47. SEDITIOUS  
 (1) impure (2) inactive  
 (3) seriously injured (4) rebellious
48. GLEAN  
 (1) to shine (2) gather  
 (3) glide (4) glorify
49. VAUNTED  
 (1) belittled (2) exacting  
 (3) highly publicized (4) trusted
50. MALADROIT  
 (1) impossible (2) awkward  
 (2) sluggish (4) hardy

**Directions :** For questions 51 to 55. These questions consist of a capitalized word followed by four alternatives. Select from among the given alternatives, the word which is most nearly opposite in meaning to the capitalized word.

51. TURPITUDE  
 (1) amplitude (2) activity  
 (3) virtue (4) calmness
52. SEDULOUS  
 (1) indolent (2) guileless  
 (3) vindictive (4) upright
53. REPROGRADE  
 (1) inclining (2) progressing  
 (3) evaluating (4) directing
54. PROVIDENT  
 (1) unholy (2) rash  
 (3) miserable (4) remote
55. PERNICIOUS  
 (1) practical (2) comparative  
 (3) harmless (4) tangible

**Directions :** For Questions 56 to 60. Each of the questions below consists of a sentence with one or two blank spaces. Each sentence is followed by four alternative sets of words. Choose the words or set of words from among the alternatives given, which when inserted in the sentence best fit the meaning of the sentence.

56. Critics of the movie version of *The Colour Purple* \_\_\_\_\_ its saccharine, overoptimistic mood as out of keeping with the novel's more \_\_\_\_\_ tone.  
 (1) applauded, sombre  
 (2) decried, acerbic  
 (3) denounced, sanguine  
 (4) acclaimed, positive
57. Measurement is, like any other human endeavour, a complex activity, subject to error, not always used \_\_\_\_\_, and frequently misinterpreted and \_\_\_\_\_.  
 (1) mistakenly, derided  
 (2) erratically, analyzed  
 (3) innovatively, refined  
 (4) properly, misunderstood
58. If you are seeking a \_\_\_\_\_ that will resolve all our ailments you are undertaking an \_\_\_\_\_ task.  
 (1) precedent, awkward  
 (2) panacea, impossible  
 (3) direction, awesome  
 (4) continuance, enjoyable
59. Your \_\_\_\_\_ tactics may comple me to \_\_\_\_\_ the contract as the job must be finished on time.  
 (1) dilatory, cancel  
 (2) pressure, delay  
 (3) offensive, award  
 (4) confiscatory, hasten

60. We need more men of \_\_\_\_\_ and enlightenment; we have too many \_\_\_\_\_ among us.  
 (1) courage, missionaries  
 (2) wisdom, pragmatists  
 (3) culture, philistines  
 (4) valour, students

*Directions : For Questions 61 to 65. In each of the following sentences four words or phrases have been underlined. Choose the underlined word or phrase that has been used inappropriately.*

61. He is a doubtful opponent, you must respect and fear him at all times.  
 (1) (2) (3) (4)
62. I have no formal clothes for this occasion; perhaps I can get away in a dark suit.  
 (1) (2) (3) (4)
63. Sodium chloride dissolves in water and so is salt.  
 (1) (2) (3) (4)
64. Even as a young boy, he has lacked the incination to go outdoors and play.  
 (1) (2) (3) (4)
65. The printing press is one of man's cleverest invention.  
 (1) (2) (3) (4)

*Directions : For Questions 66 to 70. Find the odd man out among each of the following.*

- |                                      |                                |   |                        |
|--------------------------------------|--------------------------------|---|------------------------|
| 66. (1) replicate<br>(3) impersonate | (2) duplicate<br>(4) reproduce | 69. (1) negate<br>(3) cancel  | (2) nether<br>(4) deny |
| 67. (1) renounce<br>(3) abandon      | (2) denounce<br>(4) disown     | 70. (1) homily<br>(2) sermon<br>(3) admonition<br>(4) serious warning |                        |
| 68. (1) muted<br>(3) muffled         | (2) maimed<br>(4) toned down   |   |                        |

*Directions : For Questions 71 to 75. Each of these questions has a sentence with a highlighted phrase which can be correctly substituted by one of the alternative choices that follow the sentence. Choose the alternative which can most appropriately substitute the highlighted phrase, without changing the meaning of the sentence.*

- |  |   |
|--|---|
| 71. The headmaster could not regard this <b>latest escapde</b> as a boyish joke and expelled the young man.<br>(1) new prank (2) flighty conduct<br>(3) current exit (4) innovative escape | 74. He offered to drive her to the airport for <b>a very small</b> fee.<br>(1) a nominal<br>(2) a wholesome<br>(3) an appropriate<br>(4) an ordinary  |
| 72. The police immediately <b>restrained and handcuffed</b> the prisoner so that he could not escape.<br>(1) arrested (2) detained<br>(3) manacled (4) quarantined                         | 75. As the Godfather, Michael Corleone is unwilling to expse his wife and children to the <b>sordid and unwholesome</b> side of his life as a mafia don.<br>(1) exciting (2) seamy<br>(3) unlawful (4) breathtaking |
| 73. The foul smells began to <b>fill her with disgust</b> .<br>(1) overpower her (2) nauseate her<br>(3) throttle her (4) asphyxiate her   |   |

**Directions :** For Questions 76 to 80. Each of these questions consists of a related pair of capitalized words, followed by four alternative pairs of words. Select the pair that best expresses a relationship similar to that expressed in the pair of capitalized words.

76. OGLE : OBSERVE  
 (1) haggle : outbid  
 (2) clamour : dispute  
 (3) discern : perceive  
 (4) flaunt : display
77. PROLOGUE : PLAY  
 (1) chapter : novel  
 (2) overture : opera  
 (3) intermezzo : symphony  
 (4) epilogue : oration
78. CHAFF : WHEAT  
 (1) mote : dust  
 (2) gold : lead  
 (3) dregs : wine  
 (4) yolk : egg
79. NEBULOUSNESS : DEFINITION  
 (1) apathy : zeal  
 (2) penetration : depth  
 (3) rectitude : sombreness  
 (4) rigidity : homogeneity
80. SAP : VITALITY  
 (1) persevere : fortitude  
 (2) bore : tedium  
 (3) drain : resolve  
 (4) enhance : allure

### TEST III Quantitative Aptitude

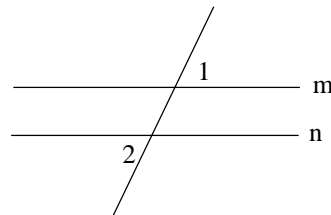
81. 252 can be expressed as a product of primes as  
 (1)  $2 \times 3 \times 3 \times 3 \times 7$  (3)  $2 \times 2 \times 3 \times 3 \times 7$   
 (2)  $3 \times 3 \times 3 \times 3 \times 7$  (4)  $2 \times 2 \times 2 \times 3 \times 7$
82. LCM of 27, 63, 72 is  
 (1) 1512 (2) 1522  
 (3) 1532 (4) 1542
83. A worker makes a toy every  $\frac{2}{3}$  hour. If the worker works for  $7\frac{1}{2}$  hours, how many toys will he make?  
 (1)  $11\frac{3}{4}$  toys (2)  $13\frac{3}{4}$  toys  
 (3)  $13\frac{1}{4}$  toys (4)  $11\frac{1}{4}$  toys
84. I consume 7 chapatis at lunch and 8 chapatis at dinner. How many dozen chapatis, do I consume in a leap year?  
 (1) 450.5 dozen (2) 460.5 dozen  
 (3) 457.5 dozen (4) 467.5 dozen
85. Rs. 5000 earned Rs. 300 interest in 2 years. The rate of interest is  
 (1) 6% (2) 5%  
 (3) 4% (4) 3%
86. An Internet package originally costs Rs. 100 and was discounted 10%. After three months it was sold after being discounted 15%. How much was the package sold for?  
 (1) Rs. 75 (2) Rs. 75.50  
 (3) Rs. 76.50 (4) Rs. 76
87.  $(-5) (4) (2) \left(-\frac{1}{2}\right) \left(\frac{3}{4}\right) = ?$   
 (1) -30 (2) 15  
 (3) -15 (4) 30
88. If the average annual income of 10 workers is Rs. 15,665 and two of the workers each made Rs. 20,000 for the year, what is the remaining 8 workers' average annual income?  
 (1) Rs. 14815.25 (2) Rs. 14581.25  
 (3) Rs. 15815.25 (4) Rs. 13581.25
89.  $\sqrt[3]{-8} \times \sqrt[4]{16} = ?$   
 (1) 4 (2) -4  
 (3) 2 (4) -2
90. Simplify  $\frac{21x^4y^2}{3x^6y^3}$   
 (1)  $\frac{7}{x^2y}$  (2)  $\frac{7y}{x^2}$   
 (3)  $\frac{7y^2}{x}$  (4) 7xy

91.  $(2a + 3a^2 - 4) - 2(4a^2 - 2)(a + 4) = ?$   
 (1)  $-5a^2 + 6a + 12$  (2)  $5a^2 + 6a + 12$   
 (3)  $-5a^2 - 6a - 12$  (4)  $5a^2 - 6a - 12$
92. Find  $a$  if  $a - 3 = \frac{10}{a}$ .  
 (1)  $\sqrt{7}, 7$  (2)  $5, -2$   
 (3)  $-5, 2$  (4)  $-\sqrt{7}, 7$
93. Ram weighs 25 kg more than Shyam. Their combined weight is 325 kg. How much does Shyam weigh?  
 (1) 150 kg (2) 175 kg  
 (3) 200 kg (4) 125 kg
94. A train travels at an average speed of 50 miles per hour for  $2\frac{1}{2}$  hours and then travels at a speed of 70 miles per hour for  $1\frac{1}{2}$  hours. How far did the train travel in the entire 4 hours?  
 (1) 200 miles (2) 120 miles  
 (3) 230 miles (4) 150 miles
95. Worker A takes 8 hours to do a job. Worker B takes 10 hours to do the same job. How long should it take worker A and worker B working together, but independently, to do the same job?  
 (1)  $4\frac{1}{9}$  hours (2)  $4\frac{2}{9}$  hours  
 (3)  $4\frac{4}{9}$  hours (4)  $4\frac{5}{9}$  hours
96. A club has 20 members. They are electing a president and a vice-president. How many different outcomes of the election are possible?  
 (1) 300 (2) 380  
 (3) 200 (4) 280
97. Find  $x$  if  $\frac{4}{5} = \frac{10}{x}$   
 (1) 10.5 (2) 12  
 (3) 12.5 (4) 10
98. If  $m$  is proportional to  $na$  and  $m = 5$  when  $n = 4$ , what is the value of  $m$  when  $n = 18$ ?  
 (1) 20 (2) 22.5  
 (3) 24.5 (4) 26.5

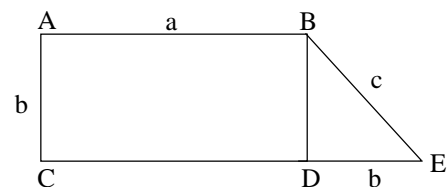
99. What is the eighth term of the sequence 1, 4, 9, 16, 25, \_\_\_\_\_?  
 (1) 36 (2) 49  
 (3) 64 (4) 81

100. Which of the following is the largest?  
 (1)  $\frac{13}{16}$  (2)  $\frac{7}{8}$   
 (3)  $\frac{31}{40}$  (4)  $\frac{63}{80}$

101. If  $m$  and  $n$  are two parallel lines and angle 1 is  $60^\circ$ , how many degrees is angle 2?



- (1)  $60^\circ$  (2)  $30^\circ$   
 (3)  $45^\circ$  (4)  $75^\circ$
102. What is the perimeter of a regular pentagon whose sides are 6 inches long?  
 (1) 18 inches (2) 24 inches  
 (3) 27.5 inches (4) 30 inches
103. How far will a wheel of radius 2 ft travel in 500 revolutions? (Assume the wheel does not slip)  
 (1) 1000  $\pi$  ft (2) 1500  $\pi$  ft  
 (3) 500  $\pi$  ft (4) 2000  $\pi$  ft
104. Given that  $x$  and  $y$  are real numbers let  $S(x, y) = x^2 - y^2$ . Then  $S(3, S(3, 4)) = ?$   
 (1) -40 (2) -7  
 (3) 40 (4) 49
105. What is the area of the figure below? ABCD is a rectangle and BDE is an isosceles right triangle.



- (1)  $ab$  (2)  $ab^2$   
 (3)  $cab$  (4)  $b\left(a + \frac{b}{2}\right)$



106. If  $2x + y = 5$  then  $4x + 2y$  is equal to  
 (1) 5 (2) 8  
 (3) 9 (4) 10
107. In 1997 a new oven cost Rs. 2500. In 2000 the cost of that type of oven is Rs. 4800. What is the percentage increase between 1997 and 2000?  
 (1) 92 (2) 152  
 (3) 192 (4) 52
108. If  $x + y = 6$  and  $3x - y = 4$  then  $x - y$  is equal to  
 (1) -1 (2) 0  
 (3) 2 (4) 4
109. If  $\frac{x}{y} = \frac{2}{3}$  then  $\frac{y^2}{x^2}$  is equal to  
 (1)  $\frac{4}{9}$  (2)  $\frac{2}{3}$   
 (3)  $\frac{3}{2}$  (4)  $\frac{9}{4}$
110. How much simple interest will Rs. 2000 earn in 18 months at an annual rate of 6%?  
 (1) Rs. 120 (2) Rs. 180  
 (3) Rs. 216 (4) Rs. 1800
111. If the average of 6 numbers is 4.5, the sum of the numbers divided by  $3^2$  is  
 (1) 4.5 (2) 3.5  
 (3) 3 (4) 5
112. The product of  $(a + b)(a^2 - ab + b^2)$  is  
 (1)  $a^3 + b^3$  (2)  $a^3 - b^3$   
 (3)  $(a + b)^3$  (4)  $(a - b)^3$
113. What is the value of the following expression?  

$$\frac{0.05 \times 0.05 \times 0.05 \times 0.04 \times 0.04 \times 0.04}{0.05 \times 0.05 - 0.05 \times 0.04 + 0.04 \times 0.04}$$
  
 (1) 0.0009 (2) 0.01  
 (3) 0.09 (4) 0.41
114. If I walk at 3 kmph, I miss a train by 2 minutes. If however I walk at 4 kmph, I reach the station 2 minutes before the arrival of the train. How far do I walk to reach the station?  
 (1)  $\frac{3}{4}$  km (2)  $\frac{4}{5}$  km  
 (3)  $\frac{5}{4}$  km (4) 1 km
115.  $\sqrt{\frac{0.289}{0.00121}} = ?$   
 (1)  $\frac{1.7}{11}$  (2)  $\frac{17}{11}$   
 (3)  $\frac{17}{110}$  (4)  $\frac{170}{11}$
116. The fractions below are in their lowest terms. Supply the missing figures.  
 $5\frac{1}{*} \times * \frac{3}{4} = 20$   
 (1) 3,1 (2) 4,1  
 (3) 5,3 (4) 3,3
117. What is the least number which must be subtracted from 10420 to make it a perfect square?  
 (1) 219 (2) 200  
 (3) 189 (4) 16
118.  $0.2 \infty 0.02 \ 0;002 = ?$   
 (1)  $\frac{8}{10^5}$  (2)  $\frac{0.8}{10^6}$   
 (3)  $8 \times 10^6$  (4)  $\frac{8}{10^6}$
119. SP = Rs. 450, loss = 10%. If gain = 10%, SP = ?  
 (1) Rs. 475 (2) Rs. 550  
 (3) Rs. 500 (4) Rs. 525
120.  $\frac{3}{8} + \frac{1}{2}$  of  $\frac{3}{16} = ?$   
 (1)  $\frac{3}{4}$  (2)  $\frac{15}{32}$   
 (3)  $\frac{21}{128}$  (4)  $\frac{15}{16}$
121.  $\sqrt{\frac{0.16}{0.4}} = ?$   
 (1) 0.2 (2) 2  
 (3)  $\sqrt{\frac{10}{5}}$  (4)  $\sqrt[5]{5}$
122. 80000 is equivalent to which of the following?  
 (1)  $2^3 \infty 10^5$  (2)  $0.2^3 \infty 10^7$   
 (3)  $2^2 \infty 20^4$  (4)  $2^4 \infty 5^8$

**123.** Rs. 720 is divided between 2 men, 5 women and 8 boys so that the share of a man, a woman and boy are in the ratio of 3 : 2 : 1. How much does each boy get?

- (1) Rs. 24                      (2) Rs. 30  
(3) Rs. 45                      (4) Rs. 72

**124.** The length of the diagonal of a square is 'a' cms. Which of the following represents the area of the square in sq. cms?

- (1) 2a                              (2)  $\frac{1}{\sqrt{2}}$   
(3)  $\frac{a^2}{2}$                               (4)  $\frac{a^2}{4}$

**125.**  $\frac{2^5 \times 9^2}{8^2 \times 3^5} = ?$

- (1)  $\frac{1}{6}$                               (2)  $\frac{2}{3}$   
(3)  $\frac{3}{2}$                               (4)  $\frac{1}{8}$

**Directions :** For Questions 126 to 130. Study the table given below and answer the questions 126 to 130.

<u>Income (Rs.)</u>	<u>Tax (Rs.)</u>
0 – 4,000	1 % of income
4,000 – 6,000	40 + 2% of income over 4,000
6,000 – 8,000	80 + 3% of income over 6,000
8,000 – 10,000	140 + 4% of income over 8,000
10,000 – 15,000	220 + 5% of income over 10,000
15,000 – 25,000	470 + 6% of income over 15,000
25,000 – 50,000	1070 + 7% of income over 25,000

**126.** How much tax is due on an income of Rs. 7,500?

- (1) Rs. 80                      (2) Rs.125  
(3) Rs. 150                      (4) Rs. 225

**127.** Your income for a year is Rs. 26,000. You receive a raise so that next year your income will be Rs. 29,000. How much more will you pay in taxes next year if the tax rate remains the same?

- (1) Rs. 70                      (2) Rs. 180  
(3) Rs. 200                      (4) Rs. 210

**128.** Vibha paid Rs. 100 tax. If X was her income, which of the following statements is true?

- (1)  $0 < X < 4,000$   
(2)  $4,000 < X < 6,000$   
(3)  $6,000 < X < 8,000$   
(4)  $8,000 < X < 10,000$

**129.** Town X has a population of 50,000. The average income of a person who lives in town X is Rs. 3,700 per year. What is the total amount paid in taxes by the people of town X? (Assume each person pays tax on Rs. 3,700)

- (1) Rs. 37                      (2) Rs. 3,700  
(3) Rs. 1,85,000              (4) Rs. 18,50,000

**130.** A person whose income is Rs. 10,000 pays what per cent of his or her income on taxes approximately?

- (1) 1                              (2) 2  
(3) 3                              (4) 4

## TEST IV Reasoning

**Directions :** For Questions 131 to 134, consider the following information.

There adults – Rs, S and V – will be travelling in a van with five children – F, H, J, I and M. The van has a driver's seat and one passenger seat in the front, and two benches behind the front seats, one bench behind the other. Each bench has room for exactly three people. Everyone must sit in a seat or on a bench, and seating is subject to the following restrictions :

- (i) An adult must sit on each bench.  
(ii) Either R or S must sit in the driver's seat.  
(iii) J must sit immediately beside M.

**131.** Which of the following can sit in the front passenger seat?

- (1) J                              (2) L  
(3) R                              (4) S

**132.** Which of the following groups of three can sit together on a bench?

- (1) F, J and M              (2) F, J and V  
(3) F, S and V              (4) H, L and S

- 133.** If F sits immediately beside V, which of the following *cannot* be true?  
 (1) H sits on the same bench as R  
 (2) J sits immediately beside S  
 (3) L sits immediately beside V  
 (4) H sits in the front passenger seat
- 134.** If S sits on a bench that is behind where J is sitting, which of the following must be true?  
 (1) L sits in a seat or on a bench that is in front of where F is sitting  
 (2) M sits on the same bench as V  
 (3) F sits on the same bench as H  
 (4) L sits on the same bench as S

*Directions : For Questions 135 to 138, unscramble the letters in the following words and find the odd man out.*

- 135.** (1) HONRT (2) EWTS  
 (3) EWSN (4) ATES
- 136.** (1) LOW (2) ERTGI  
 (3) OWC (4) ROSHE
- 137.** (1) NVESU (2) TERAH  
 (3) NOMO (4) RASM
- 138.** (1) EGERN (2) DRE  
 (3) KADR (4) RAGONE

*Directions : For Questions 139 – 140. Select the alternative which does not belong to the class of the other three.*

- 139.** (1) Million (2) Powder  
 (3) Letter (4) Compel
- 140.** (1) Belief (2) Shield  
 (3) Deceit (4) Brief
- 141.** A man starts walking in the morning facing the sun. After sometime, he turned to his left. Later he again turned to his left. The direction in which the man is moving now is  
 (1) West (2) South  
 (3) East (4) North

*Directions : For Questions 142 to 147, consider the following information.*

Two nations, Fontan and Gordia, have agreed to submit any disputes that might arise between them to arbitration panels drawn from a pool of arbitrators. The pool consists of the following : three Fontanian representatives – K, L and M; three Gordian representatives – P, Q and R; and three neutral arbitrators – S, T and U. Each arbitration panel must be formed according to the following conditions :

- (i) A panel can have three, four, five or six members.  
 (ii) At least one member of each panel must be neutral.  
 (iii) Neither Fontanian nor Gordian representatives can make up more than half the number of members on a panel.  
 (iv) S cannot be on a panel with L, with M or with U.  
 (v) R cannot be on a panel with L or with T.
- 142.** Which of the following is a properly constituted panel?  
 (1) L, M, P, Q (2) R, P, S, T  
 (3) P, Q, R, U (4) P, Q, S, T
- 143.** If both S and T are to be members of a three-member panel, then which of the following can be the third member of that panel?  
 (1) L (2) M  
 (3) P (4) R
- 144.** If R and S are both selected as members of a four-member panel, which of the following must also be selected as a member of that panel?  
 (1) K (2) L  
 (3) P (4) Q
- 145.** If K, M, Q and R are all selected as members of a five-member panel, which of the following must be selected as the fifth member of that panel?  
 (1) L (2) P  
 (3) U (4) T
- 146.** If S, P and Q are selected as members of a four-member panel and if T is not available to serve, the fourth member selected must be  
 (1) K (2) L  
 (3) M (4) R
- 147.** How many different, acceptable five-member panels can be formed if both S and R must be selected as members?  
 (1) 1 (2) 3  
 (3) 4 (4) 0

**Directions :** For Questions 148 to 155, Find the number that comes next in the sequence.

- 148.** 3, 1, 4, 5, 9, 14, 23, \_\_\_\_\_  
(1) 32 (2) 37  
(3) 41 (4) 28
- 149.** 3, 5, 8, 12, 17, 23, \_\_\_\_\_  
(1) 30 (2) 28  
(3) 29 (4) 33
- 150.** 3, 6, 18, 72, 360, \_\_\_\_\_  
(1) 720 (2) 1080  
(3) 1600 (4) 2160
- 151.** 7776, 1296, 216, \_\_\_\_\_  
(1) 16 (2) 36  
(3) 108 (4) 21
- 152.** - 15, 2, 21, 42, \_\_\_\_\_  
(1) 62 (2) 84  
(3) 65 (4) 66
- 153.** 1, 2, 5, 29, \_\_\_\_\_  
(1) 866 (2) 58  
(3) 53 (4) 145
- 154.** 13, 10, 4, -5, -17 \_\_\_\_\_  
(1) - 32 (2) - 34  
(3) 34 (4) - 22
- 155.** 0.5, 1.5, 3, 5, 7.5, 10.5, \_\_\_\_\_  
(1) 21 (2) 13.5  
(3) 14 (4) 15

**Directions :** For Questions 156 to 159, consider the following information.

Seven persons – N, Q, R, S, T, U and W – are all the persons present at a party. All of them join distinct conversational groups that form during the party and these consist of two, three, or four persons at a time. At any time during the party, each of the persons present is considered to be a member of exactly one of the conversational groups. During the party the following conditions are satisfied :

- (i) N can never be in the same conversational group as S.  
(ii) T must be in a conversational group that includes either S or W, but T cannot be in a conversational group with both S and W.  
(iii) W must be in a conversational group that consists of exactly three persons.

- 156.** Which of the following lists three conversational groups that can exist at the same time during the party?  
(1) N and S; Q, T and W; R and U  
(2) N and T; R and S; Q, U and W  
(3) N and U; R and S; Q, T and W  
(4) N and W; S and U; Q, R and T
- 157.** If, at a certain point during the party, R, T and W are members of three distinct conversational groups, S must at that that point be in a conversational group that includes  
(1) Q (2) R  
(3) T (4) W
- 158.** If, at a certain point during the party, a group of three persons and a group of four persons have formed and W is in the same conversational group as U, who of the following must that point be in the group with W and U?  
(1) N (2) Q  
(3) R (4) S
- 159.** If, at a certain point during the party, one of the conversational groups consists only R and W, at that point N must be part of a group of exactly  
(1) two persons, whose other member is T  
(2) two persons, whose other members is U  
(3) four persons, whose other members include S  
(4) four persons, whose other members include T

**Directions :** For Questions 160 to 163. In each of these questions a word has been given following four other words, one of which cannot be formed by using the letters of the given word that word.

- 160. RECOMMENDATIONS**  
(1) RAINS (2) MEANT  
(3) SOON (4) NURSE
- 161. UNDERESTIMATED**  
(1) ESTIMATE (2) DIRT  
(3) EARTH (4) TIMER

**162. DETERMINATION**

- (1) TAME (2) NORTH  
 (3) TEAM (4) MINT

**163. AUTONOMOUS**

- (1) TOON (2) AUNTS  
 (3) MASON (4) SAME

**164.** In a certain code, if SAND is written as TBOE, then how is GATE written?

- (1) FMNO (2) HBUF  
 (3) FZSD (4) HBUD

*Directions : For Questions 165 to 167, find the missing letter.*

**165.** U, T, S, R, \_\_\_\_\_

- (1) M (P) P  
 (3) Q (4) N

**167.** H, I, K, N, \_\_\_\_\_

- (1) Q (2) S  
 (3) O (4) R

**166.** B, E, H, \_\_\_\_\_

- (1) K (2) L  
 (3) J (4) M

*Directions : For Questions 168 to 173, consider the following information.*

The curator of a sculpture garden is planning an exhibit. Seven statues – F, G, H, J, R, S and U – are to be exhibited, three on the south lawn, four on the north lawn. Four of the statues – F, G, H and J – are made of steel, and three – R, S, and U – are made of bronze.

The curator will satisfy the following requirements in setting up the exhibit :

- (i) Each lawn will have at most two bronze statues placed on it.  
 (ii) G cannot be on the same lawn as U.  
 (iii) H cannot be on the same lawn as R.

**168.** Which of the following groups could be placed on the north lawn?

- (1) F, G, H, and U (2) F, H, S and U  
 (3) G, H, R and S (4) G, J, R and U

**173.** If F and G are placed on the north lawn, which of the following groups could be placed on the south lawn?

- (1) H, J, and S (2) H, J and U  
 (3) H, R and U (4) J, S and U

**169.** If U and R are placed on the north lawn, which of the following groups must be placed on the south lawn?

- (1) F, G and H (2) F, J and S  
 (3) G, H and S (4) G, H and U

**174.** Pointing towards Neela, Nitin said "I am the only son of her mother's son." How is Neela related to Nitin?

- (1) Mother (2) Cousin  
 (3) Niece (4) Aunt

**170.** If S and U are placed on the south lawn, each of the following must be placed on the north lawn EXCEPT

- (1) F (2) G  
 (3) H (4) J

**175.** "Buses for Delhi leave every  $3\frac{1}{2}$  hours. The bus for Delhi left 20 minutes ago. The next bus for Delhi will leave at 6 : 30 p.m." At what time was this announcement made?

- (1) 3 : 00 p.m. (2) 3 : 20 p.m.  
 (3) 3 : 30 p.m. (4) 4 : 00 p.m.

**171.** If S and R are placed on the south lawn, which of the following must also be placed on the south lawn?

- (1) F (2) G  
 (3) H (4) J

**172.** If G and H are placed on the south lawn, which of the following must also be placed on the south lawn?

- (1) F (2) J  
 (3) R (4) S

**176.** If (i) is taller than Q, (ii) R is shorter than P, (iii) S is taller than T but shorter than Q, then who among them is the tallest?

- (1) P (2) Q  
 (3) S (4) T

**Directions :** For Questions 177 to 181, consider the following information.

- (i) M and S are good in Dramatics and computer Science
- (ii) A and M are good in Computer Science and Physics
- (iii) A, P and N are good in Physics and History
- (iv) N and A are good in Physics and Mathematics
- (v) P and S are good in History and Dramatics

**177.** Who is good in Physics, History and Mathematics, but not in Computer Science?

- (1) P
- (2) A
- (3) M
- (4) N

**178.** Who is good in History, Physics, Computer Science and Mathematics?

- (1) A
- (2) M
- (3) N
- (4) P

**179.** Who is good in Physics, History and Dramatics?

- (1) M
- (2) P
- (3) A
- (4) S

**180.** Who is good in Physics, Dramatics and Computer Science?

- (1) S
- (2) P
- (3) M
- (4) A

**181.** Who is good in Computer Science, History and Dramatics?

- (1) M
- (2) A
- (3) N
- (4) S

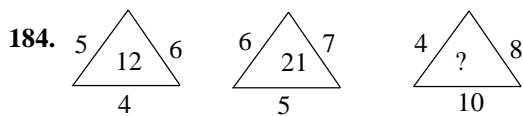
**182.** Drama is related to Director in the same way as Magazine is related to \_\_\_\_\_?

- (1) Reader
- (2) Printer
- (3) Editor
- (4) Story

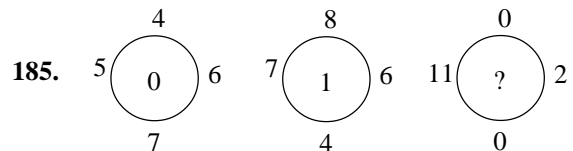
**183.** Three of the following four are alike in a certain way and so form a group. Which one does **not** belong to that group?

- (1) Beam
- (2) Roof
- (3) Wall
- (4) House

**Directions :** For Questions 184 and 185, find the missing number.



- (1) 30
- (2) 32
- (3) 320
- (4) 22



- (1) 12
- (2) 10
- (3) 11
- (4) 0

**Directions :** For Questions 186 to 191, consider the following information.

- (i) Nine people – F, G, H, I, J, K, L, M and N – are the only people who can serve on three committees designated X, Y and Z and each person must serve on exactly one of the committees.
- (ii) Committee X must have exactly one more member than does committee Y.
- (iii) It is possible that there are no members of committee Z.
- (iv) Neither F nor G nor H can serve on committee X.
- (v) Neither I nor J nor K can serve on committee Y.
- (vi) Neither L nor M nor N can serve on committee Z.

**186.** If L and F are the only persons serving on committee Y, how many of the nine people must serve on committee Z?

- (1) 3
- (2) 4
- (3) 5
- (4) 6

**187.** Of the nine people, the greatest number that can serve together on committee Z is

- (1) 9
- (2) 8
- (3) 7
- (4) 6

**188.** If N is the only person serving on committee Y, Which of the following must serve on committee X?

- (1) L and M                      (2) J and K  
(3) J and L                      (4) K and M

**189.** If none of the nine people serves on committee Z, which of the following must be a person who serves on committee X?

- (1) F                                  (2) G  
(3) I                                  (4) L

**190.** If L, M and H are the only persons serving on committee Y, the complete membership of committee Z must be

- (1) F and G                      (2) F and I  
(3) G and J                      (4) G and K

**191.** Which of the following groups could constitute the membership of committee Z?

- (1) G and L                      (2) H and K  
(3) G, H and I                  (4) I, J and K

**Directions :** For Questions 192 to 194, unscramble the letters in the following words, and find the last word of the sentence/question.

**192.** (1) SI                              (2) REENG  
(3) ETH                              (4) RSASG

(3) SI                              (4) ALET

**193.** (1) OTO                          (2) TI

**194.** (1) AMEN                      (2) HTAW  
(3) SI                              (4) ROUY

**Directions :** For Questions 195 to 200, consider the following information.

H, J, K, L, M, N and O are the only legislators eligible to vote on bills 1, 2 and 3, each of which will be passed if at least four legislators vote in favour of it. Each legislator must vote on all three bills; no abstentions are possible. The following is known :

- (i) H must vote against all three bills; each of the other legislators must vote in favour of at least one bill and against at least one bill.  
(ii) J must vote against bill 1.  
(iii) O must vote against bills 2 and 3.  
(iv) L must vote the same way that K does on all three bills.  
(v) N must vote the same way that O does on all three bills.

**195.** Which of the following must vote in favour of bill 1 ?

- (1) K                                  (2) L  
(3) M                                  (4) O

**198.** If any bill is to be passed, which of the following must be among the legislators who vote in favour of it?

- (1) J                                  (2) K  
(3) M                                  (4) N

**196.** The maximum number of favourable votes that bill 2 could receive is

- (1) two                              (2) three  
(3) four                              (4) five

**199.** If M votes the same way that O does on all three bills, which of the following can be determined?

- (1) Bill 1 will be passed (2) Bill 1 will be defeated  
(3) Bill 2 will be passed (4) Bill 2 will be defeated

**197.** Which of the following *cannot* be true?

- (1) J and K vote in favour of the same bill  
(2) J and O vote in favour of the same bill  
(3) J votes in favour of one bill and against two bills  
(4) K votes in favour of two bills and against one bill

**200.** If K votes in favour of bills 2 and 3, which of the following can be determined?

- (1) Bill 1 will be passed (2) Bill 1 will be defeated  
(3) Bill 2 will be passed (4) Bill 3 will be passed