

OPENMAT (XXI) Entrance Test for Management Programmes 2007

Total No. of Questions = 200

Time : 180 Minutes

- All questions are compulsory.
- Use of calculator is not allowed. Rough work may be done in the space provided at the back of the Test booklet.
- The Test booklet has the following 4 tests :

Test-I	General Awareness	No. of Questions 30
--------	-------------------	---------------------

Test-II	English Language	No. of Questions 50
---------	------------------	---------------------

Test-III	Quantitative Aptitude	No. of Questions 50
----------	-----------------------	---------------------

Test-IV	Reasoning	No. of Questions 70
---------	-----------	---------------------

Read the instructions given on the OMR Response Sheet carefully before you start.

How to fill up the information on the OMR Response Sheet
(Examination Answer Sheet)

1. Write your complete enrolment no. in 9 digits. This should correspond to the enrolment number indicated by you on the OMR Response Sheet. Also write your correct name, address with pin code in the space provided. Put your signatures on the OMR Response Sheet with date. Ensure that the Invigilator in your examination hall also puts his signatures with date on the OMR Response Sheet at the space provided.
2. On the OMR Response Sheet student's particulars are to be filled in by pen. However use HB pencil for writing the Enrolment No. and Examination Centre Code as well as for blackening the rectangle bearing the correct answer number against the serial number of the question.
3. Do not make any stray remarks on this sheet.
4. Write correct information in numerical digit in Enrolment No. and Examination Centre Code columns. The corresponding rectangle should be dark enough and should be filled in completely.
5. Each question is followed by four probable answers which are numbered 1, 2, 3 & 4. You should select and show only one answer to each question considered by you as the most appropriate or the correct answer. Select the most appropriate answer. Then by using HB pencil, blacken the rectangle bearing the correct answer number against the serial number of the question. If you find that answer to any question is none of the four alternatives given under the question you should darken the rectangle '0'.
6. If you wish to change your answer, ERASE completely the already darkened rectangle by using a good quality eraser and then blacken the rectangle bearing your revised answer number. If incorrect answer is not erased completely, smudges will be left on the erased rectangle and the question will be read as having two answers and will be ignored for giving any credit.
7. No credit will be given if more than one answer is given for one question. Therefore, you should select the most appropriate answer.
8. You should not spend too much time on any one question. If you find any particular question difficult, leave it and go to the next. If you have time left after answering all the questions, you may go back to the unanswered ones. There is no negative marking for wrong answers.

GENERAL INSTRUCTIONS

1. No cell phones, calculators, books, slide-rules, note-books or written notes, etc. will be allowed inside the examination hall.
2. You should follow the instructions given by the Centre Superintendent and by the Invigilator at the examination venue. If you violate the instructions you will be disqualified.
3. Any candidate found copying or receiving or giving assistance in the examination will be disqualified.
4. The Test Booklet and the OMR Response Sheet (Answer Sheet) would be supplied to you by the Invigilators. After the examination is over, you should hand over the OMR Response Sheet to the Invigilator before leaving the examination hall. Any candidate who does not return the OMR Response Sheet will be disqualified and the University may take further action against him/her.
5. All rough work is to be done on the test booklet itself and not on any other paper. Scrap paper is not permitted. For arriving at answers you may work in the margins, make some markings or underline in the test booklet itself.
6. The University reserves the right to cancel scores of any candidate who impersonates or uses/adopts other malpractices or uses any unfair means. The examination is conducted under uniform conditions. The University would also follow a procedure to verify the validity of scores of all examinees uniformly. If there is substantial indication that your performance is not genuine, the University may cancel your score.
7. In the event of your qualifying the Entrance Test, the hall ticket should be enclosed with your admission form while submitting it to the University for seeking admission in Management Programme along with your testimonials and programme fee. Admission forms received without hall ticket in original will be summarily rejected.

TEST I
GENERAL AWARENESS

1. Which of the following is used as a food preservative ?
 - (1) Sodium Benzoate
 - (2) Sodium Thiosulphate
 - (3) Sodium Hydroxide
 - (4) Sodium Bicarbonate

2. Which of the following authors was given the Booker Prize for the book "Half a Life" ?
 - (1) Arundhati Roy
 - (2) Vikram Seth
 - (3) V.S. Naipaul
 - (4) Kiran Bedi

3. Deficiency of which of the following causes Xerophthalmia ?
 - (1) Vitamin B₃
 - (2) Vitamin B₁₂
 - (3) Vitamin A
 - (4) Vitamin C

4. Elements of which one of the following pairs form ionic bonds between them when combined together ?
 - (1) Sodium and Chlorine
 - (2) Carbon and Hydrogen
 - (3) Chlorine and Chlorine
 - (4) Nitrogen and Hydrogen

5. When did the World Trade Organisation (WTO), which sets out rules for world trade, come into force ?
 - (1) 1948
 - (2) 1951
 - (3) 1954
 - (4) 1995

6. A regressive tax will tend to redistribute income, more
 - (1) Equally
 - (2) Unequally
 - (3) Equitably
 - (4) Proportionately

7. While considering the Gross National Product (GNP), which of the following is **not** required ?
- (1) Governmental purchases of goods
 - (2) Per capita income of individuals
 - (3) Private investment
 - (4) Net Foreign Investment
8. Which of the following poets coined the title 'Lady with a Lamp' for Florence Nightingale in his 1858 poem, 'Santa Filomena' ?
- (1) T.S. Eliot
 - (2) Robert Frost
 - (3) William Wordsworth
 - (4) Henry Longfellow
9. Which global communications giant was originally set up by Alexander Graham Bell as The Bell Telephone Company in 1877 ?
- (1) Siemens
 - (2) Nokia
 - (3) AT & T
 - (4) Ericsson
10. Who is the author of the book "Beyond Peace" ?
- (1) Richard Nixon
 - (2) Mikhail Gorbachev
 - (3) Nelson Mandela
 - (4) George Bush
11. Which of its states did the US purchase from Spain for 5 million dollars in 1877 ?
- (1) Arizona
 - (2) New Mexico
 - (3) Washington
 - (4) Florida
12. The element of an electric stove is made of
- (1) Copper
 - (2) Invar
 - (3) Magnalium
 - (4) Nichrome

13. A body falling freely from a height towards the earth, moves with uniform
- (1) Speed
 - (2) Velocity
 - (3) Acceleration
 - (4) Weight
14. Which of the following substances is obtained by fractionation of human blood ?
- (1) Antivenom Serum
 - (2) Gamma Globulin
 - (3) Polio Vaccine
 - (4) Diphtheria Antitoxin
15. To whom did Iltutmish dedicate the 'Qutab Minar' ?
- (1) Razia Sultan
 - (2) Qutbuddin Aibak
 - (3) Qutbuddin Bakhtiyar Kaki
 - (4) Moinuddin Chisti
16. "Beyond The Last Blue Mountain" is the biography of
- (1) Sir Edmund Hillary
 - (2) Bachhendri Pal
 - (3) JRD Tata
 - (4) Dhirubhai Ambani
17. Which of the following countries was the host of the 20th Winter Olympics in 2006 ?
- (1) Italy
 - (2) Australia
 - (3) Spain
 - (4) Canada
18. The first Viceroy of India was
- (1) Lord Hastings
 - (2) Lord Canning
 - (3) Lord Minto
 - (4) Lord Curzon
19. Sandy soil is dry in comparison to clay due to
- (1) Osmosis
 - (2) Plasmolysis
 - (3) Capillary action
 - (4) Environment

20. Which of the following features may occur, when volcano lava cools at the surface ?
- (1) Batholith
 - (2) Basalt Plateau
 - (3) Laccolith
 - (4) Sill
21. Which of the following is the sweetest natural sugar ?
- (1) Glucose
 - (2) Lactose
 - (3) Sucrose
 - (4) Fructose
22. Which of the following is a vitamin ?
- (1) Keratin
 - (2) Riboflavin
 - (3) Thyroxin
 - (4) Adrenalin
23. The first general elections to the Lok Sabha were held in
- (1) 1948
 - (2) 1950
 - (3) 1952
 - (4) 1954
24. Mahatma Gandhi was the editor of
- (1) National Herald
 - (2) Modern Review
 - (3) Seminar
 - (4) Young India
25. When were the High Courts in Calcutta, Madras and Bombay established ?
- (1) 1861
 - (2) 1929
 - (3) 1952
 - (4) 1961

26. The All India Trade Union Congress came into being in 1920 as the foremost representative of the labour movement in India. Who amongst the following was the founder of AITUC ?
- (1) Shri Ram Bajpai
 - (2) H.N. Kunzru
 - (3) N.M. Joshi
 - (4) V.V. Giri
27. Which of the following titles, given by the British Government to Mahatma Gandhi, was surrendered during the Non-Cooperation Movement ?
- (1) Rt. Honorable
 - (2) Rai Bahadur
 - (3) Hind Kesari
 - (4) Kaiser-e-Hind
28. Who amongst the following was impeached in England for acts committed as Governor General of India ?
- (1) Wellesley
 - (2) Warren Hastings
 - (3) Cornwallis
 - (4) Cavendish Bentinck
29. Which of the following is observed as the "World Population Day" ?
- (1) 11th June
 - (2) 11th July
 - (3) 11th August
 - (4) 11th September
30. Who was the first woman President of the Indian National Congress ?
- (1) Vijayalakshmi Pandit
 - (2) Sarojini Naidu
 - (3) Bhikaji Cama
 - (4) Annie Besant

TEST II

ENGLISH LANGUAGE

Directions for Questions No. 31 to 45 : *The section consists of two passages followed by questions based on the contents of the passage. Answer all questions following each passage on the basis of what is stated or implied in the passage.*

Passage I

All of the cells in a particular plant start out with the same complement of genes. How then can these cells differentiate and form structures as different as roots, stems, leaves and fruits ? The answer is that only a small subset of the genes in a particular kind of cell are expressed or turned on, at a given time. This is accomplished by a complex system of chemical messengers that in plants include hormones and other regulatory molecules. Five major hormones have been identified : auxin, abscisic acid, cytokinin, ethylene, and gibberellins. Studies of plants have now identified a new class of regulatory molecules called oligosaccharins.

Unlike the oligosaccharins, the five well-known plant hormones are pleiotropic rather than specific; that is, each has more than one effect on the growth and development of plants. The five have so many simultaneous effects that they are not very useful in artificially controlling the growth of crops. Auxin also causes the plant to develop a vascular system, to form lateral roots, and to produce ethylene.

The pleiotropy of the five well-studied plant hormones is somewhat analogous to that of certain hormones in animals. For example, hormones from the hypothalamus in the brain stimulate the anterior lobe of the pituitary gland to synthesize and release many different hormones, one of which stimulates the release of hormones from the adrenal cortex. These hormones have specific effects on target organs all over the body. One hormone stimulates the thyroid gland, for example, another ovarian follicle cells, and so forth. In other words, there is a hierarchy of hormones.

Such a hierarchy may also exist in plants. Oligosaccharins are fragments of the cell wall released by enzymes : different enzymes release different oligosaccharins. There are indications that pleiotropic plant hormones may actually function by activating the enzymes that release these other, more specific chemical messengers from the cell wall.

31. According to the passage, the five well-known plant hormones are not useful in controlling the growth of crops because
- (1) it is not known exactly what functions the hormones perform
 - (2) each hormone has various effects on plants
 - (3) none of the hormones can function without the others
 - (4) each hormone has different effects on different kinds of plants
32. The passage suggests that the place of hypothalamic hormones in the hormonal hierarchies of animals is similar to the place of which of the following in plants ?
- (1) Plant cell walls
 - (2) The complement of genes in each plant cell
 - (3) A subset of a plant cell's gene complement
 - (4) The five major hormones
33. The passage suggests that which of the following is a function likely to be performed by an oligosaccharin ?
- (1) To stimulate a particular plant cell to become part of a plant's root system
 - (2) To stimulate the walls of a particular cell to produce other oligosaccharins
 - (3) To activate enzymes that release specific chemical messengers from plant cell walls
 - (4) To duplicate the gene complement in a particular plant cell
34. The author mentions specific effects that auxin has on plant development in order to illustrate the
- (1) point that some of the effects of plants hormones can be harmful
 - (2) hierarchical nature of the functioning of plant hormones
 - (3) differences among the best-known plant hormones
 - (4) concept of pleiotropy as it is exhibited by plant hormones

35. According to the passage, which of the following best describes a function performed by oligosaccharins ?
- (1) Regulating the daily functioning of a plant's cells
 - (2) Interacting with one another to produce different chemicals
 - (3) Releasing specific chemical messengers from a plant's cell walls
 - (4) Producing the hormones that cause plant cells to differentiate to perform different functions
36. The passage suggests that, unlike the pleiotropic hormones, oligosaccharins could be used effectively to
- (1) trace the passage of chemicals through the walls of cells
 - (2) pinpoint functions of other plant hormones
 - (3) artificially control specific aspects of the development of crops
 - (4) alter the complements of genes in the cells of plants
37. The term pleiotropy used in the passage refers to
- (1) quality of producing a multiplicity of growth related effects
 - (2) hierarchical nature
 - (3) capacity to synthesize
 - (4) capacity to regenerate
38. The five well-known hormones **cannot** be used to artificially control growth of crops because
- (1) their effects are not necessarily specific
 - (2) they are capable of producing too many simultaneous effects
 - (3) they are difficult to synthesize
 - (4) they only work in combinations which are difficult to replicate artificially

Passage II

Seeking a competitive advantage, some professional service firms (for example, firms providing advertising, accounting, or health care services) have considered offering unconditional guarantees of satisfaction. Such guarantees specify what clients can expect and what the firm will do if it fails to fulfil these expectations. Particularly with first-time clients, an unconditional guarantee can be an effective marketing tool if the client is very cautious, the firm's fees are high, the negative consequences of bad service are grave, or business is difficult to obtain through referrals and word-of-mouth.

However, an unconditional guarantee can sometimes hinder marketing efforts. With its implication that failure is possible, the guarantee may, paradoxically, cause clients to doubt the service firm's ability to deliver the promised level of service. It may conflict with a firm's desire to appear sophisticated, or may even suggest that a firm is begging for business. In legal and health care services, it may mislead clients by suggesting that lawsuits or medical procedures will have guaranteed outcomes. Indeed, professional service firms with outstanding reputations and performance to match have little to gain from offering unconditional guarantees. And any firm that implements an unconditional guarantee without undertaking a commensurate commitment to quality of service is merely employing a potentially costly marketing gimmick.

39. The primary function of the passage as a whole is to
- (1) account for the popularity of a practice
 - (2) evaluate the utility of a practice
 - (3) demonstrate how to institute a practice
 - (4) weigh the ethics of using a strategy
40. All of the following are mentioned in the passage as circumstances in which professional service firms can benefit from offering an unconditional guarantee *except*
- (1) The firm is having difficulty retaining its clients of long standing
 - (2) The firm is having difficulty getting business through client recommendations
 - (3) The firm charges substantial fees for its services
 - (4) The adverse effects of poor performance by the firm are significant for the client

41. Which of the following is cited in the passage as a goal of some professional service firms in offering unconditional guarantees of satisfaction ?
- (1) A limit on the firm's liability
 - (2) Successful competition against other firms
 - (3) Ability to justify fee increases
 - (4) Attainment of an outstanding reputation in a field
42. The passage's description of the issue raised by unconditional guarantees for health care or legal services most clearly implies that which of the following is true ?
- (1) The legal and medical professions have standards of practice that would be violated by attempts to fulfil such unconditional guarantees
 - (2) The result of a lawsuit or medical procedure cannot necessarily be determined in advance by the professional handling a client's case
 - (3) The dignity of the legal and medical professions is undermined by any attempts at marketing or professional services, including unconditional guarantees
 - (4) Clients whose lawsuits or medical procedures have unsatisfactory outcomes cannot be adequately compensated by financial settlements alone
43. The passage most clearly implies which of the following about professional service firms 'with outstanding reputations and performance to match'.
- (1) They are unlikely to have offered unconditional guarantees in the past
 - (2) They are usually profitable enough to be able to compensate clients according to terms of an unconditional guarantee
 - (3) Their fees are usually more affordable than those of other professional service firms
 - (4) Their clients are usually already satisfied with the quality of their services
44. The term unconditional guarantee used in the passage implies
- (1) a guarantee of superlative performance
 - (2) a guarantee of performance as promised, with no conditionalities
 - (3) a promise of guaranteed satisfaction to all buyers without distinction
 - (4) a guarantee contingent upon a certain level of purchase or history of usage
45. An appropriate title of the passage should be
- (1) Service Guarantees : Pros and Cons
 - (2) Marketing Implications of Unconditional Guarantees
 - (3) Professional Services and Unconditional Guarantees
 - (4) Unconditional Guarantees as Competitive Tools

Directions for Questions No. 46 to 50 : Each of these questions consists of a word in capital letters, followed by four options. Choose the option that is most **similar** in meaning to the word in capital letters, in each case.

46. BALEFUL

- (1) doubtful
- (3) deadly

- (2) virtual
- (4) virtuous

47. PLAINTIVE

- (1) mournful
- (3) rural

- (2) senseless
- (4) evasive

48. POLEMIC

- (1) blackness
- (3) magnetism

- (2) controversy
- (4) lighting

49. INIMICAL

- (1) antagonistic
- (3) accurate

- (2) anonymous
- (4) fanciful

50. GAUCHE

- (1) rigid
- (3) awkward

- (2) swift
- (4) taciturn

Directions for Questions No. 51 to 55 : Each of these questions consists of a word in capital letters followed by four words or phrases. Choose the alternative that is most nearly opposite in meaning to the word in capital letters, in each case.

51. ASSUAGE

- (1) describe
- (3) worsen

- (2) wince
- (4) introduce

52. EXTRINSIC

- (1) reputable
- (3) ambitious

- (2) inherent
- (4) cursory

53. EUPHONIOUS

- (1) strident
- (3) literary

- (2) lethargic
- (4) significant

54. PROVIDENT

- (1) unholy
- (3) miserable

- (2) rash
- (4) disabled

55. RETROGRADE

- (1) progressing
- (3) evaluating

- (2) reclining
- (4) directing

Directions for Questions No. 56 to 60 : Each of these questions consists of a capitalized word followed by four sentences in which the word has been used in different ways. Choose the option in which the usage of the word is **incorrect or inappropriate**.

56. CALL

- (1) Call your names when I point at you.
- (2) All the officers of his unit called upon him when he was down with fever.
- (3) I am always available on call during working hours.
- (4) There are times when one is called upon to work far beyond the regular hours of duty

57. HABIT

- (1) People resort to habit when selecting a product because it is easy to do so.
- (2) The Pastor was dressed in a dark habit.
- (3) He is a creature of long established habit.
- (4) He was pleased to be rid of his habit about smoking.

58. MOVING

- (1) He gave a moving speech.
- (2) You should think twice before deciding about moving here permanently.
- (3) Moving boulders seems easier than moving hearts.
- (4) Moving between exalted circles like the Royal club parties, gave him an unreal feeling.

59. OBJECT

- (1) I have no idea why Father objected to our plans.
- (2) Objecting strongly to the motion, the party leaders stormed out of the meeting.
- (3) Ram took strong exception to my objecting his amendments.
- (4) Why should you object to everything that is proposed ?

60. STAY

- (1) Mother is out of hospital but she has to stay in bed for a few more days.
- (2) The other members of the team left as planned but Susan stayed at the hotel.
- (3) During your next visit to Goa, you must stay with us.
- (4) The Court stayed the proceedings of the inquiry committee.

Directions for Questions No. 61 to 65 : In each of these questions, a related pair of words in capital letters is followed by four alternative pairs of words. Select the pair that best expresses a relationship similar to that expressed by the pair in capital letters.

61. INDIGENT : WEALTH

- (1) contended : happiness
- (2) aristocratic : stature
- (3) smug : complacency
- (4) emaciated : nourishment

62. PERJURY : OATH

- (1) plagiarism : authority
- (2) embezzlement : trust
- (3) testimony : court
- (4) jury : vow

63. DESCRY : DISTANT

- (1) mourn : lost
- (2) whisper : muted
- (3) discern : subtle
- (4) entrap : hostile

64. ROUT : DEFEAT

- (1) ovation : applause
- (2) grief : failure
- (3) triumph : failure
- (4) memory : oblivion

65. AVER : AFFIRMATION

- (1) proclaim : objection
- (2) denounce : defiance
- (3) demur : protest
- (4) nonplus : resistance

Directions for Questions No. 66 to 70 : Each of these questions consists of a sentence followed by four alternatives. Select the alternative that conveys the same meaning as the original sentence in the question, in each case.

- 66.** The army collapsed before the week was out.
- (1) In less than a week the army collapsed.
 - (2) After a week, the army collapsed.
 - (3) The army collapsed last week.
 - (4) A weak army must collapse.
- 67.** Preeti is twenty, and her husband is old enough to be her father.
- (1) Preeti's husband is twenty.
 - (2) Preeti's husband is forty plus.
 - (3) Preeti's father is old.
 - (4) Preeti's husband is old and fatherly.
- 68.** While the nation sleeps, the defence force never sleeps.
- (1) The defence is always alert.
 - (2) The nation is strong and confident.
 - (3) The nation may falter, the defence doesn't.
 - (4) The defence force does not sleep at night.
- 69.** I don't believe Karan would say that.
- (1) I don't believe anything Karan says.
 - (2) Karan is a liar.
 - (3) In my opinion, Karan would never say that.
 - (4) Karan says that I do not believe him.
- 70.** Snow had fallen before the repairmen fixed the furnace.
- (1) The snow ruined the furnace.
 - (2) The furnace was out of order when winter arrived.
 - (3) The repairmen got delayed because of the snow.
 - (4) Snow fell on the furnace.

Directions for Questions No. 71 to 75 : Each of these questions consists of a sentence with four parts underlined. Select the part which is not acceptable as per standard written English.

71. The opinions of the crowd exerts more influence on her than they should.
 (1) (2) (3) (4)
72. We will not be effected by John's decisions, but he will not become aware of that fact for several weeks.
 (1) (2) (3) (4)
73. We finished our climb by sighting the mountain-top than we prepared the evening meal.
 (1) (2) (3) (4)
74. These pair of shoes look too small, but I'd like to try them on.
 (1) (2) (3) (4)
75. I had hoped to have learned French before my trip to Paris, but I did not have any extra money for a course.
 (1) (2) (3) (4)

Directions for Questions No. 76 to 80 : Each of these questions consists of a sentence with two blanks, followed by four alternative set of words. Choose the set of words that best fits the meaning of the sentence as a whole.

76. As soon as they realized that he had won their support by a _____ they _____ their endorsement of his candidacy.
 (1) margin — strengthened (2) subterfuge — withdrew
 (3) fraud — reaffirmed (4) chance — affirmed
77. Although the delegates were aware of the _____ problem, they could not agree on the _____ issues.
 (1) intensity — minor (2) importance — substantive
 (3) urgency — tentative (4) enormity — marginal
78. He is particularly good in roles that require _____ and _____.
 (1) suavity — sophistication (2) humour — pathos
 (3) maturity — novelty (4) glamour — earthiness
79. Though he was theoretically a _____ of the left, his voting record in Parliament _____ that impression.
 (1) friend — created (2) friend — belied
 (3) critic — confirmed (4) supporter — maintained
80. Your _____ tactics may compel me to _____ the contract as the job must be finished on time.
 (1) dilatory — cancel (2) offensive — shelve
 (3) confiscatory — award (4) infamous — forget

TEST III
QUANTITATIVE APTITUDE

81. How many numbers are there between 200 and 300 in which 9 occurs only once ?
(1) 19 (2) 20
(3) 18 (4) 21
82. An amount of Rs. 417 is divided among A, B, C and D in such a way that A gets Rs. 13 more than B, B gets Rs. 9 more than C, and C gets Rs. 6 more than D. Find A's share.
(1) Rs. 121 (2) Rs. 116
(3) Rs. 120 (4) Rs. 124
83. Find the value of $\sin 45^\circ \cdot \cos 45^\circ - \sin^2 30^\circ$.
(1) $\frac{1}{4}$ (2) $\frac{1}{2}$
(3) $\frac{1}{3}$ (4) 1
84. In how many ways can 36 be written as a product of two natural numbers ?
(1) 4 (2) 5
(3) 3 (4) 9
85. The value of a number is five times the sum of its digits. The number is
(1) 36 (2) 27
(3) 45 (4) 18
86. Manu took a loan of Rs. 20,000 at 5% SI for 2 years and invested it at 4% CI for the same period. What is the gain/loss in the transaction ?
(1) Rs. 368 gain (2) Rs. 423 gain
(3) Rs. 368 loss (4) Rs. 200 gain
87. Jaya spends $\frac{1}{4}$ th of her leisure hours on reading and $\frac{2}{3}$ rd of the remaining on watching television. If she spends 2 hours on watching TV, what is the total time of her leisure ?
(1) 6 hours (2) 8 hours
(3) 2 hours (4) 4 hours

88. A plant reproduces at the rate of 25% every 12 min. In approximately how much time will it triple itself ?
- (1) 90 min (2) 60 min
(3) 40 min (4) 75 min
89. Six friends have an average height of 167 cm. Sonu with height 162 cm leaves. What is the new average ?
- (1) 168 cm (2) 166 cm
(3) 170 cm (4) 169 cm
90. What strength of 20 ml acid should be added to 10 ml of 50% acid to get an average strength of 20% acid ?
- (1) 0.5% (2) 5%
(3) 50% (4) 5.5%
91. A dishonest shopkeeper uses a weight of 800 gm in place of 1 kg and adds 20% impurities in wheat. What would be his profit percentage if he claims to be selling at cost price ?
- (1) 30% (2) 40%
(3) 50% (4) 60%
92. If the price of sugar is raised by 30%, find how much percent a housewife must reduce her consumption to keep her sugar expenditure the same ?
- (1) 25% (2) 20%
(3) 23% (4) $16\frac{2}{3}\%$
93. The value of $3333 - 333 \div 3$ is
- (1) 1000 (2) 2000
(3) 3222 (4) 3122
94. The product of 0.3, 0.03 and 0.003 is
- (1) 0.333 (2) 0.00027
(3) 0.0000027 (4) 0.000027
95. If a train travels 90 km in one hour, how long will it take to travel 21 km ?
- (1) 20 minutes (2) 14 minutes
(3) 12 minutes (4) 17 minutes

96. If $A : B = 2 : 3$, $B : C = 5 : 9$, then $A : B : C$ is
- (1) $10 : 15 : 17$ (2) $10 : 15 : 18$
 (3) $10 : 15 : 27$ (4) $10 : 18 : 15$
97. What percent of 850 is 8.5 ?
- (1) 0.1% (2) 1.0%
 (3) 1.1% (4) 100%
98. Which of following is the largest ?
- $\frac{3}{8}, \frac{7}{16}, \frac{5}{12}, \frac{1}{6}$
- (1) $\frac{5}{12}$ (2) $\frac{7}{16}$
 (3) $\frac{3}{8}$ (4) $\frac{1}{6}$
99. Simplify $\frac{(0.9)^3 - (0.1)^3}{(0.9)^2 - (0.1)^2}$
- (1) 0.8 (2) 0.81
 (3) 0.91 (4) 1.01
100. What smallest number should be added to make 831 exactly divisible by 17 ?
- (1) 3 (2) 2
 (3) 4 (4) 5
101. In an examination 65% of the candidates passed in English and 56% passed in Mathematics while 25% failed in both the subjects. What percentage passed in both the subjects ?
- (1) 46% (2) 56%
 (3) 54% (4) 27%
102. $\frac{2}{5}$ th of a property is worth Rs. 10,000/-. What is $\frac{7}{10}$ th of the property worth ?
- (1) Rs. 27,500/- (2) Rs. 16,500/-
 (3) Rs. 17,500/- (4) Rs. 15,000/-
103. A tradesman marks his goods at 20% above cost price and allows purchases at a discount of 10% for cash. What is his gain percent ?
- (1) 10 (2) 12
 (3) 8 (4) 18

104. A man invests Rs. 4,400/- in a stock at 110 and sells out when the stock rises to 119. What is his profit ?
- (1) Rs. 396/- (2) Rs. 380/-
(3) Rs. 360/- (4) Rs. 340/-
105. A mixture of 20 litres of milk and water contains 10% water. How much water should be added to it to increase the percentage of water to 25 ?
- (1) 5 litres (2) 3 litres
(3) 2 litres (4) 4 litres
106. A can do a piece of work in 20 days. He worked at it for 2 days. Then B completed it in 9 days. In how many days can B alone do the whole work ?
- (1) 10 days (2) 11 days
(3) 13 days (4) 12 days
107. A boat is rowed down a river at 10 km/hr and up the river at 2 km/hr. Find the speed of the current.
- (1) 8 km/hr (2) 6 km/hr
(3) 3.5 km/hr (4) 4 km/hr
108. A camp has provisions to last for 6 weeks for 224 cadets. How many cadets must be sent away in order that provisions last for 7 weeks ?
- (1) 192 (2) 32
(3) 48 (4) 96
109. The radius of the circle whose area is equal to the sum of the areas of two circles whose radii are 5 cm and 12 cm respectively, is
- (1) 19 cm (2) 17 cm
(3) 13 cm (4) 14 cm
110. In a race, the speeds of A and B are in the ratio 3 : 4. A takes 30 min more than B to reach the destination. The time taken by A to reach the destination is
- (1) 1 hr (2) 90 min
(3) 2 hr (4) 2.5 hr

111. If there is Rs. 495/- in a bag in denominations of one-rupee, 50-paise and 25-paise coins which are in the ratio 1 : 8 : 16, how many 50-paise coins are there in the bag ?
- (1) 50 (2) 220
(3) 440 (4) 200
112. A father's age is four times the age of his elder son and five times that of his younger son. When the elder son has lived to three times his present age, then the father's age will exceed twice that of his younger son's by 3 years. What is the father's age ?
- (1) 40 years (2) 32 years
(3) 30 years (4) 50 years
113. A person is standing on a staircase. He walks down 4 steps, up 3 steps, down 6 steps, up 2 steps, up 9 steps and down 2 steps. Where is he standing now in relation to the step on which he stood when he started ?
- (1) 2 steps up (2) 1 step up
(3) At the same place (4) 1 step down
114. Two pipes A and B can fill a tank in 4 hr. and 5 hr. respectively. If they are turned on alternately for 1 hr. each, the tank will be filled in (assume A was turned on first)
- (1) 4 hr. 24 min (2) 4 hr.
(3) 4.5 hr. (4) 5 hr.
115. If the train A running at 72 km/hr. crosses a tree standing by the side of the track in 7 sec., the length of the train is
- (1) 150 m (2) 135 m
(3) 140 m (4) 126 m
116. What is the surface area of a sphere whose diameter is 21 cm ?
- (1) 1286 sq.cm (2) 1386 sq.cm
(3) 1486 sq.cm (4) 1000 sq.cm
117. In 2004, the rainfall in Kolkata was 80% of the normal. If the actual rainfall was 36 cm, what is the normal rainfall for Kolkata ?
- (1) 35 cm (2) 55 cm
(3) 48 cm (4) 45 cm

118. Due to 30% fall in price of TV sets, there is a rise of 20% in sales. How will the income of the shop be affected ?
- (1) 16% rise (2) 16% fall
(3) 15% fall (4) 20% rise
119. Find the longest possible pole that can be kept in a room 7 m long, 5 m broad and 4 m high.
- (1) $2\sqrt{10}$ m (2) $3\sqrt{10}$ m
(3) $4\sqrt{10}$ m (4) $10\sqrt{3}$ m
120. Simplify $\frac{0.6 \times 0.6 \times 0.6 + 0.4 \times 0.4 \times 0.4}{0.3 \times 0.3 \times 0.3 + 0.2 \times 0.2 \times 0.2}$
- (1) 8 (2) 6
(3) 4 (4) 18
121. A bag contains 8 red, 7 green and 5 blue balls. What is the maximum number of balls which should be drawn to ensure that at least one ball of each colour is drawn ?
- (1) 9 (2) 11
(3) 14 (4) 16
122. The fifth part of a certain number exceeds its seventh part by 10. The number is
- (1) 150 (2) 175
(3) 205 (4) 200
123. If $x + \frac{4}{x} = 4$, then $x = ?$
- (1) 2 (2) 6
(3) 4 (4) 8
124. Amit spent Rs. 501 in buying tables and chairs. If each table costs Rs. 21/- and each chair costs Rs. 15/- and the total number of articles bought was 27. How many of each kind did Amit buy ?
- (1) 16 tables, 11 chairs (2) 15 tables, 12 chairs
(3) 17 tables, 10 chairs (4) 18 tables, 9 chairs
125. How many lead balls each of radius 1 cm can be made from a sphere of radius 8 cm ?
- (1) 64 (2) 128
(3) 256 (4) 512

Directions for Questions No. 126 to 130 :

The following table gives information on expenditure by different sectors in 2004 – 05 in crores of rupees. Answer the questions based on these.

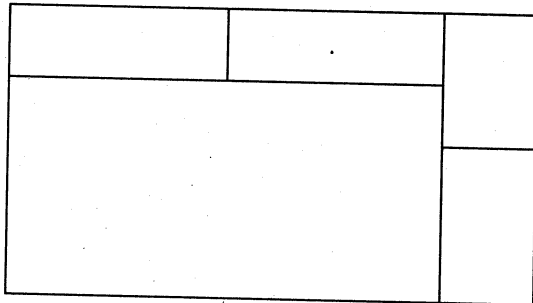
<u>Sector</u>	<u>Expenditure (in crores of Rs.)</u>
IT industry	470
Agriculture	620
Education	280
Irrigation	530
Health	330

- 126.** The expenditure on agriculture is nearly how many times more than the expenditure on education ?
- (1) $\frac{17}{14}$ (2) $\frac{31}{14}$
- (3) $\frac{12}{7}$ (4) $\frac{24}{7}$
- 127.** What percent of the whole expenditure is spent on IT industry ?
- (1) 21 (2) 26.7
- (3) 21.9 (4) 22
- 128.** The expenditure on irrigation is how much per cent more than the expenditure on health ?
- (1) 39.4 (2) 3.94
- (3) 60.6 (4) 6.06
- 129.** The expenditure on education is how much percent less than the expenditure on IT industry ?
- (1) 60.6 (2) 6.06
- (3) 40.4 (4) 4.04
- 130.** The ratio of expenditure on health to the expenditure on agriculture is
- (1) 1 : 53 (2) 53 : 1
- (3) 33 : 62 (4) 30 : 62

TEST IV

REASONING

131. In a certain apartment building exactly $\frac{1}{3}$ of the apartments have two bedrooms and exactly $\frac{1}{7}$ of the two bedroom apartments are front apartments. Which of the following could be the total number of apartments in the building ?
- (1) 42 (2) 50
(3) 56 (4) 57
132. The sum of n different positive integers is less than 100. What is the greatest possible value of n ?
- (1) 10 (2) 11
(3) 12 (4) 13
133. A graduating class of 356 votes to choose a president. With 5 candidates seeking office, what is the least number of votes a successful candidate could receive and yet have more votes than any other candidate ?
- (1) 71 (2) 72
(3) 89 (4) 179
134. The size of the smaller angle between the hands of the clock at half past six, expressed in degrees, is
- (1) $7\frac{1}{2}$ (2) 10
(3) 15 (4) $22\frac{1}{2}$
135. What is the number of rectangles in the following figure ?



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

Directions for Questions No. 136 to 143 : Find the number that comes next in the sequence.

136. 1, 6, 13, 22, 33, _____

- | | |
|--------|--------|
| (1) 44 | (2) 46 |
| (3) 40 | (4) 55 |

137. 45, 75, 105, 165, 195, 255, _____

- | | |
|---------|---------|
| (1) 315 | (2) 345 |
| (3) 285 | (4) 300 |

138. 4, 16, 80, 480, _____

- | | |
|----------|----------|
| (1) 3360 | (2) 960 |
| (3) 980 | (4) 3160 |

139. 9, — 7, 18, — 18, 31, _____

- | | |
|----------|----------|
| (1) — 33 | (2) 31 |
| (3) — 18 | (4) — 29 |

140. 1, 4, 2, 8, 6, 24, 22, 88, _____

- | | |
|---------|---------|
| (1) 352 | (2) 188 |
| (3) 84 | (4) 86 |

141. 5, 16, 49, 104, _____

- | | |
|---------|---------|
| (1) 159 | (2) 137 |
| (3) 181 | (4) 204 |

142. 2, 5, 9, 19, 37, _____

- | | |
|--------|--------|
| (1) 73 | (2) 75 |
| (3) 55 | (4) 74 |

143. 1, 9, 17, 33, 49, 73, _____

- | | |
|---------|--------|
| (1) 97 | (2) 89 |
| (3) 105 | (4) 93 |

Directions for Questions No. 144 to 147 : Consider the following information.

A mail carrier must deliver mail by making a stop at each of 6 buildings : K, L, M, O, P and S. Mail to be delivered is of two types, ordinary mail and priority mail. The delivery of both types of mail is subject to the following conditions :

- (i) Regardless of the type of mail to be delivered, mail to P and mail to S must be delivered before mail to M is delivered.
- (ii) Regardless of the type of mail to be delivered, mail to L and mail to K must be delivered before mail to S is delivered.
- (iii) Mail to buildings receiving some priority mail must be delivered, as far as the above conditions permit, before mail to buildings receiving only ordinary mail.

144. If K is the only building receiving priority mail, which of the following lists the buildings in an order, from first through sixth, in which they can receive their mail ?

- (1) L, K, P, S, O, M
- (2) L, K, S, P, M, O
- (3) K, P, L, S, O, M
- (4) O, K, L, P, S, M

145. If L, M, and S are each receiving priority mail, which of the following lists the buildings in an order, from first to sixth, in which they must receive their mail ?

- (1) K, L, P, S, O, M
- (2) L, K, S, P, M, O
- (3) M, L, S, P, K, O
- (4) S, L, M, P, K, O

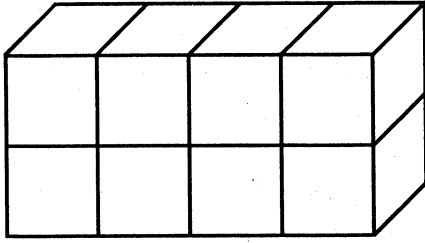
146. If the sequence of buildings to which mail is delivered is O, P, L, K, S, M and if S is receiving priority mail, which of the following is a complete and accurate list of buildings that must also be receiving priority mail ?

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

147. If only one building is to receive priority mail, and, as a result, O can be no earlier than fourth in the order of buildings, which of the following must be the building receiving priority mail that day ?

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

148. The rectangular solid below is made up of eight cubes of the same size, each of which has exactly one face painted blue. What is the greatest fraction of the total surface area of the solid that could be blue ?



- (1) $\frac{1}{6}$
(2) $\frac{1}{4}$
(3) $\frac{2}{7}$
(4) $\frac{1}{3}$

Directions for Questions No. 149 to 153 : In each of these questions, four words have been given, out of which three are alike in some manner and the fourth one is different. Find the odd one out.

149. (1) Poland (2) Greece
(3) Spain (4) Japan
150. (1) Copper (2) Tin
(3) Brass (4) Zinc
151. (1) Eagle (2) Kiwi
(3) Penguin (4) Ostrich
152. (1) Ear (2) Eye
(3) Kidney (4) Heart
153. (1) Cotton (2) Nylon
(3) Jute (4) Silk

Directions for Questions No. 154 to 158 : Study the following information.

A, B, C, D, E and F are students of a class. Each one has topped in one of the six different subjects : Maths, English, Hindi, History, Geography and Science. Each one has got a different overall rank.

- (i) The highest ranker has topped in Science.
- (ii) D, who is higher in rank than E but lower than A, has topped in History.
- (iii) The lowest ranker among them has topped in Maths.
- (iv) A and E have topped in neither Science nor Geography.
- (v) F has topped in Geography.
- (vi) F in order of rank is lower than E who has topped in Hindi and is higher than C.

154. Who among the following has topped in science ?

- | | |
|-------|-------|
| (1) A | (2) B |
| (3) C | (4) E |

155. Who has the lowest rank ?

- | | |
|-------|-------|
| (1) A | (2) B |
| (3) C | (4) D |

156. In which subject has A topped ?

- | | |
|-------------|-------------|
| (1) English | (2) Hindi |
| (3) Maths | (4) Science |

157. Which rank does F hold among the six students ?

- | | |
|------------|-----------|
| (1) First | (2) Third |
| (3) Fourth | (4) Fifth |

158. In which subject has E topped ?

- | | |
|---------------|-------------|
| (1) English | (2) Hindi |
| (3) Geography | (4) History |

159. At a luncheon table where 12 men are seated, one-half of the men belong to Club A, one-third belong to Club B, and one-fourth belong to both clubs. How many men belong to neither ?
- (1) 3 (2) 4
(3) 5 (4) 6
160. There are 200 questions in a 3-hour examination. Among these questions are 50 mathematics problems. It is suggested that twice as much time be allowed for each mathematics problem as for each of the other questions. How many minutes should be spent on mathematics problems ?
- (1) 36 (2) 60
(3) 72 (4) 120
161. A child ranked sixteenth from the top and twenty-ninth from the bottom among those who passed an examination. Six children did not participate and five failed in it. How many children were there in the class ?
- (1) 40 (2) 50
(3) 53 (4) 55

Directions for Questions No. 162 to 165 : Consider the following information.

- (i) A, B, C, D, E, F, and G are sitting on a bench and all of them are facing east.
(ii) C is at the immediate right of D.
(iii) B is at the extreme end and has E as his neighbour.
(iv) G is between E and F.
(v) D is sitting third from the south end.

162. Who is sitting to the right of E ?
- (1) A (2) C
(3) D (4) G
163. Who are sitting at the two ends ?
- (1) A, B (2) A, E
(3) C, B (4) F, B
164. The person sitting at the third position from the north end is
- (1) E (2) F
(3) G (4) D
165. Between which of the following pairs is D sitting ?
- (1) A, C (2) C, F
(3) D, F (4) C, E

166. If the seventh day of a month is three days earlier than Friday, what day will it be on the nineteenth day of the month ?

- | | |
|--------------|------------|
| (1) Sunday | (2) Monday |
| (3) Thursday | (4) Friday |

Directions for Questions No. 167 to 170 : Consider the following information.

Seats on a small plane are being assigned to six passengers — N, P, Q, R, S and T. The eight seats on the plane are in four rows, numbered 1 through 4, and each row has two seats. Seat assignments are made according to the following conditions :

- (i) N must sit alone in a row.
- (ii) P must sit in the same row as R.
- (iii) Q cannot sit in the same row as S.
- (iv) The rows with only one passenger must be row 1 and row 3.

167. Which of the following passengers could be assigned to sit in the same row as Q ?

- | | |
|-------|-------|
| (1) P | (2) R |
| (3) S | (4) T |

168. If P and R are in row 2, which of the following must be true ?

- (1) N is in row 1
- (2) T is in row 4
- (3) Q is in row 1
- (4) S is in row 3

169. Which of the following is the total number of passengers eligible to be the passenger(s) assigned to sit in the same row as T ?

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

170. If Q and T are assigned to sit together in a row, which of the following passengers could be assigned to sit in row 3 ?

- | | |
|-------|-------|
| (1) Q | (2) R |
| (3) S | (4) T |

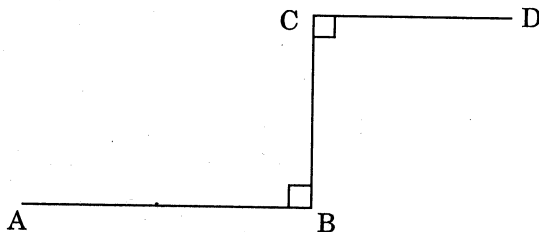
Directions for Questions No. 171 to 175 : Unscramble the letters in the following words and find the odd one out.

171. (1) UNG (2) EIRFL
(3) OPSTIL (4) WROSD
172. (1) EHDLI (2) MBIUMA
(3) AKLDNA (4) OIHCCN
173. (1) NRU (2) ELPSE
(3) LBICM (4) UPMJ
174. (1) YOHKCE (2) KRICCET
(3) HECSS (4) ENTNIS
175. (1) UBCE (2) QREASU
(3) RTAGINEL (4) ENGETRCAL

Directions for Questions No. 176 to 185 : A solid cube of each side 8 cm, has been painted red, blue and black on pairs of opposite faces. It is then cut into small cubical blocks of each side 2 cm.

176. How many small cubes are there in all ?
(1) 32 (2) 40
(3) 56 (4) 64
177. How many cubes have no face painted ?
(1) 0 (2) 4
(3) 8 (4) 12
178. How many cubes have only one face painted ?
(1) 16 (2) 24
(3) 36 (4) 48

179. How many cubes have only two faces painted ?
- (1) 8 (2) 16
(3) 20 (4) 24
180. How many cubes have three faces painted with different colours ?
- (1) 0 (2) 8
(3) 10 (4) 12
181. How many cubes have two faces painted red and black and all other faces unpainted ?
- (1) 8 (2) 4
(3) 0 (4) 12
182. How many cubes have only one face painted red and all other faces unpainted ?
- (1) 4 (2) 8
(3) 12 (4) 16
183. How many cubes have two faces painted black ?
- (1) 2 (2) 4
(3) 8 (4) 0
184. How many cubes have one face painted blue and one face painted red ? (The other faces may be painted or unpainted)
- (1) 4 (2) 8
(3) 16 (4) 20
185. How many cubes have three faces painted ?
- (1) 8 (2) 16
(3) 20 (4) 24
186. In the figure below, $AB \perp BC$, $BC \perp CD$, $AB = 8$, $BC = 5$, $CD = 4$. What is the shortest distance from A to D ?



- (1) 12 (2) 13
(3) 15 (4) 16

87. In June a baseball team that played 60 games had won 30% of its games played. After a phenomenal winning streak this team raised its average to 50%. How many games must the team have won in a row to attain this average ?
- (1) 12 (2) 20
(3) 24 (4) 30
188. In a row of ten boys, when a boy was shifted by two places towards the left, he became seventh from the left end. What was his earlier position from the right end of the row ?
- (1) Second (2) Third
(3) First (4) Fifth
189. In a chess tournament each of six players will play every other player exactly once. How many matches will be played during the tournament ?
- (1) 8 (2) 15
(3) 30 (4) 36
190. A clock is so placed that at 12 noon its minute hand points towards north-east. In which direction will its hour hand point at 1 : 30 p.m. ?
- (1) North (2) South
(3) West (4) East
191. If the above clock is turned through an angle of 135° in the anticlockwise direction, in which direction will its minute hand point at 8 : 45 pm ?
- (1) North (2) South
(3) East (4) West

Directions for Questions No. 192 to 193 : Select an appropriate letter to replace the question mark (?) to continue the series.

192. W U R N I ?

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

193. C H K P S ?

- (1) X (2) Z
(3) T (4) V

Directions for Questions No. 194 to 200 : Consider the following information.

At a symposium on the possible dangers of the industrial chemical PBX, three pro-industry spokespersons are to be seated to the left of the moderator and three critics of PBX to the right of the moderator. The speakers are A, B, C, D, E and F.

- (i) The person delivering the paper "Epidemiological Aspects of PBX" is seated immediately between A and D
- (ii) The persons delivering "Public Health and PBX" and "Radiological Aspects of PBX" are close friends and insist on sitting together.
- (iii) F is placed two seats to the left of the moderator.
- (iv) As heavy smoking is repugnant to the moderator, she insists that the person delivering "PBX : Benign or Malignant," a heavy smoker, be seated at one end of the table
- (v) C, delivering "The Impact of PBX on the Environment", is seated to the left of F.
- (vi) A, a critic of PBX, is seated to the left of E.

194. The pro-industry spokespersons are

- (1) A, F, D
- (2) F, B, A
- (3) C, F, B
- (4) C, F, E

195. The person seated immediately to the left of the moderator is

- (1) A
- (2) B
- (3) C
- (4) D

196. Assuming it is one of the papers delivered at the symposium, "PBX and the Digestive Tract" must be by

- (1) A
- (2) B
- (3) E
- (4) F

197. Given the seating rules as stated, which of the numbered statements are logically sufficient to establish the position of E and the title of the paper she delivers ?

- (1) i, iii
- (2) i, vi
- (3) i, iii, vi
- (4) i, iv, v, vi

198. The symposium is expanded to include a seventh speaker. If he is seated exactly midway between C and the moderator, he will sit

- (1) to the left of the author of "Radiological Aspects of PBX"
- (2) one seat to the right of the moderator
- (3) two seats to the right of D
- (4) three seats to the left of A

199. The symposium is expanded to include two more speakers. The seventh speaker is seated at one end of the table. If the eighth speaker is seated exactly midway between D and the author of "Public Health and PBX", which of the following must be true ?

- (1) The eighth speaker must be seated at one end of the table
- (2) B must be the author of "Radiological Aspects of PBX"
- (3) The eighth speaker must be seated on the same side of the moderator as F
- (4) The eighth speaker must be seated immediately to the left of E

200. Which of the following **cannot** be determined on the basis of the information given ?

- I. The author of "Public Health and PBX"
 - II. The title of the paper delivered by D
 - III. The identity of the two friends who insist on being together
- (1) I only
 - (2) II only
 - (3) III only
 - (4) I and II only

SPACE FOR ROUGH WORK