



**MCA Entrance Paper – GGSIPU – 2011**

**MATHEMATICS**

- If  $8x - 10y + 66 = 0$  and  $40x - 18y - 214 = 0$  are two lines of regression, then the coefficient of correlation is  
(a) 0.6 (b) 0.8  
(c) 0.7 (d) 0.9
- The maximum value of  $P = 3x + 5y$  subject to  $x \leq 2, y \leq 3, x + y \leq 4, x \geq 0, y \geq 0$  is  
(a) 15 (b) 16  
(c) 18 (d) 20
- If the roots of the equation  $x^3 - 12x^2 + 39x - 28 = 0$  are in AP, then their common difference will be  
(a)  $\pm 1$  (b)  $\pm 3$   
(c)  $\pm 5$  (d) None of these
- $\int [f(x)g''(x) - f''(x)g(x)]dx =$   
(a)  $\frac{f(x)}{g'(x)}$   
(b)  $f'(x)g(x) - f(x)g'(x)$   
(c)  $f(x)g'(x) - f'(x)g(x)$   
(d)  $f(x)g'(x) + f'(x)g(x)$
- If  $y = 2$  is the directrix and  $(0, 1)$  is the vertex of the parabola  $x^2 + \lambda y + \mu = 0$ , then  $(\lambda, \mu)$  is equal to  
(a)  $(4, -4)$  (b)  $(-4, 4)$   
(c)  $(8, 8)$  (d)  $(-8, 8)$
- Let  $f(x) = \sin x$ ,  $g(x) = x^2$  and  $h(x) = \log_e x$ . If  $F(x) = (\text{hogof})(x)$ , then  $F''(x)$  is equal to  
(a)  $2\operatorname{cosec}^3 x$  (b)  $1 - 2\operatorname{cosec}^2 x$   
(c)  $2x\cot^2 x$  (d) None of these
- If  $xy = a^2$  and  $cs = b^2x + c^2y$ , where  $a, b$  and  $c$  are constants then the minimum value of  $s$  is  
(a)  $abc$  (b)  $2abc$   
(c)  $bc/\sqrt{a}$  (d) None of these
- If  $\alpha$  and  $\beta$  are roots of the equation  $ax^2 + 3x + 2 = 0$  ( $a < 0$ ), then  $\frac{\alpha^2}{\beta} + \frac{\beta^2}{\alpha}$  is greater than  
(a) 0 (b) 1  
(c) 2 (d) None of these
- If  $f(x+1) + f(x-1) = 2f(x)$  and  $f(0) = 0$ , then  $f(n), n \in \mathbb{N}$  is  
(a)  $nf(1)$  (b)  $[f(1)]^n$   
(c) 0 (d) None of these
- A question paper contains six questions each having an alternative. The number of ways in which an examinee can attempt one or more questions is  
(a) 729 (b) 728  
(c) 31 (d) 35
- Total number of solutions of  $\tan x + \cot x = 2\operatorname{cosec} x$  in  $[-2\pi, 2\pi]$  is equal to  
(a) 2 (b) 4  
(c) 6 (d) 3
- If the system of equations  $x + y = 3, y + z = 5, z + x = 4, x + y + kz = 6$  is consistent then  $k$  equals  
(a) -1 (b) 1  
(c) 2 (d) 0
- If 0.10 is the probability that a certain kind of measuring device will show excessive drift, then the probability that the fifth measuring device tested will be the first to show excessive drift will be  
(a) 0.06567 (b) 0.06569  
(c) 0.06571 (d) 0.06561
- Constant forces  $\vec{P} = \hat{i} - 2\hat{j} + 3\hat{k}$ ,  $\vec{Q} = \hat{i} + 3\hat{j} - \hat{k}$  and  $\vec{R} = 2\hat{i} - 4\hat{j} + 3\hat{k}$  act on a particle. The work done when the particle is displaced from a point A with position vector  $4\hat{i} - 3\hat{j} - 2\hat{k}$  to the point B with position vector  $6\hat{i} + \hat{j} - 3\hat{k}$   
(a) 15 (b) 13  
(c)  $\sqrt{13}$  (d) None of these
- If  $a, b, c$  are in HP, then  $\frac{a}{b+c}, \frac{b}{c+a}, \frac{c}{a+b}$  are in  
(a) AP (b) GP  
(c) HP (d) None of these
- The vertex of the parabola  $y^2 = 8x$  is at the centre of a circle and the parabola cuts the circle at the ends of its latus rectum. Then the equation of the circle is  
(a)  $x^2 + y^2 = 20$  (b)  $x^2 + y^2 = 4$   
(c)  $x^2 + y^2 = 80$  (d) None of these





17. A plane passes through a fixed point  $(a, b, c)$ . The locus of the foot of the perpendicular to it from the origin is:  
(a) An ellipsoid (b) A sphere  
(c) A paraboloid (d) None of these
18. The points representing the complex number  $z$  for which  $\arg\left(\frac{z-2}{z+2}\right) = \frac{\pi}{3}$  lie on  
(a) An ellipse (b) A straight line  
(c) A circle (d) A parabola
19. The third term of a GP is 4. The product of first five terms is  
(a)  $4^3$  (b)  $4^5$   
(c)  $4^7$  (d) None of these
20. For the equation  $|x|^2 + |x| - 6 = 0$   
(a) There is only one root  
(b) The product of the roots is -4  
(c) The sum of the roots is 4  
(d) None of these
21. The numeric value of  $\sin 12^\circ \sin 48^\circ \sin 54^\circ$  is equal to  
(a)  $\frac{1}{2}$  (b)  $\frac{1}{4}$   
(c)  $\frac{1}{8}$  (d)  $\frac{1}{16}$
22. The area of the pentagon whose vertices are  $(4, 1)$ ,  $(3, 6)$ ,  $(-5, 1)$ ,  $(-3, -3)$  and  $(-3, 0)$  is  
(a)  $30 \text{ unit}^2$  (b)  $60 \text{ unit}^2$   
(c)  $120 \text{ unit}^2$  (d) None of these
23. A bag contains 4 red and 3 blue balls. Two draws of 2 balls each are made. The probability that the first draw gives 2 red balls and the second draw 2 blue balls, if the balls are not returned after the first draw, is  
(a)  $\frac{4}{49}$  (b)  $\frac{7}{36}$   
(c)  $\frac{3}{35}$  (d)  $\frac{6}{35}$
24. The number of integral terms in the expression of  $(5^{1/2} + 7^{1/8})^{1024}$  is  
(a) 127 (b) 128  
(c) 129 (d) 130
25. If  $1, \alpha_1, \alpha_2, \dots, \alpha_{n-1}$  are the  $n$  roots of unity, then  $(1 - \alpha_1)(1 - \alpha_2) \dots (1 - \alpha_{n-1})$  is equal to  
(a)  $n - 1$  (b)  $n$   
(c)  $-1$  (d) None of these
26. The differential equation of all parabolas whose axis is the  $x$ -axis is  
(a)  $y \frac{d^2 y}{dx^2} - \left(\frac{dy}{dx}\right)^2 = 0$   
(b)  $y \frac{d^2 y}{dx^2} + \left(\frac{dy}{dx}\right)^2 = 0$   
(c)  $y \left(\frac{dy}{dx}\right)^2 + xy = 0$   
(d) None of these
27. The sum of the series  $\frac{x-1}{x+1} + \frac{x^2-1}{2(x+1)^2} + \frac{x^3-1}{3(x+1)^3} + \dots$  is  
(a)  $\log_e x - 2$  (b)  $\log_e \frac{x}{e}$   
(c)  $\log_e x$  (d)  $\log_e x - 1$
28. The area of the parallelogram whose diagonals represent the vectors  $3\hat{i} + \hat{j} - 2\hat{k}$  and  $\hat{i} - 3\hat{j} + 4\hat{k}$  is  
(a)  $10\sqrt{3}$  (b)  $5\sqrt{3}$   
(c) 8 (d) 4
29. If  $x, y, z$  are in AP then the value of  $\begin{vmatrix} 4 & 5 & 6 & x \\ 5 & 6 & 7 & y \\ 6 & 7 & 8 & z \\ x & y & z & 0 \end{vmatrix}$  is  
(a) 1 (b) 2  
(c) 3 (d) None of these
30. If  $A$  is a square matrix of order  $n \times n$  and  $k$  is a scalar, then  $\text{adj}(kA)$  is equal to  
(a)  $k \text{adj}(A)$  (b)  $k^n \text{adj}(A)$   
(c)  $k^{n-1} \text{adj}(A)$  (d)  $k^{n+1} \text{adj}(A)$
31. If a ray travelling along the line  $x=1$  gets reflected from the line  $x+y=1$ , then the equation of the line along which the reflected ray travels is  
(a)  $x=0$  (b)  $y=0$   
(c)  $x=y=1$  (d) none of these
32. Let  $f: (-1, 1) \rightarrow B$  be a function defined by  $f(x) = \tan^{-1} \frac{2x}{1-x^2}$ , then  $f$  is both one-one and onto when  $B$  is the interval  
(a)  $\left(-\frac{\pi}{2}, \pi\right)$  (b)  $\left(-\pi, \frac{\pi}{2}\right)$   
(c)  $\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$  (d)  $\left(0, \frac{\pi}{2}\right)$





33. Let  $f(x) = x - |x - x^2|$ ,  $x \in [-1, 1]$ . Then the number of points at which  $f(x)$  is discontinuous is

- (a) 1 (b) 2  
(c) 0 (d) None of these

34. The set  $S = \{1, 2, 3, \dots, 15\}$  is to be partitioned into three sets A, B, C of equal size

- (a)  $\frac{15!}{(5!)^3}$  (b)  $\frac{15!}{3!(5!)^3}$   
(c)  $\frac{15!}{(5!)^4}$  (d) None of these

35. The image of the point  $(1, 2, 5)$  in the plane  $2x - y - z + 3 = 0$  is

- (a)  $\left(\frac{7}{3}, \frac{4}{3}, \frac{13}{3}\right)$  (b)  $\left(\frac{4}{5}, \frac{6}{5}, \frac{9}{5}\right)$   
(c)  $\left(\frac{8}{3}, \frac{7}{3}, \frac{5}{3}\right)$  (d) None of these

36. If the tangent  $(1, 1)$  on  $y^2 = x(2 - x)^2$  meets the curve again at P, then P is

- (a)  $(4, 4)$  (b)  $(-1, 2)$   
(c)  $\left(\frac{9}{4}, \frac{3}{8}\right)$  (d) None of these

37. The area between  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$  and the straight line  $\frac{x}{a} + \frac{y}{b} = 1$  is

- (a)  $\frac{1}{2}ab$  (b)  $\frac{1}{2}\pi ab$   
(c)  $\frac{1}{4}ab$  (d) None of these

38. If  $\sin x + \cos x = \frac{\sqrt{7}}{2}$ , where  $x \in \left[0, \frac{\pi}{4}\right]$ , then

- $\tan \frac{x}{2}$  is equal to,  
(a)  $\frac{3 - \sqrt{7}}{3}$  (b)  $\frac{\sqrt{7} - 2}{3}$   
(c)  $\frac{4 - \sqrt{7}}{4}$  (d) None of these

#### ENGLISH LANGUAGE AND COMPREHENSION

**Directions for Questions (39 to 45):** Each of the sentences given below contains an *italicized word or phrase* and is followed by four alternatives, one of which conveys almost the same meaning as italicized word or phrase in the sentence. Choose the correct option

39. India possesses a *gigantic* force to cope with any sort of threat.

- (a) Very efficient (b) Very clever  
(c) Having lot of stamina (d) Very huge

40. He is providing *adamant* as he is not giving the correct information.

- (a) Unyielding (b) Selfish  
(c) Staying far away (d) Not working for others

41. They *abhor* crime and therefore keep them selves away from petty things.

- (a) Something liked  
(b) Feel hate and disgustful  
(c) Feel compassion and sympathy  
(d) Fade away

42. You should not respond at least to your parents with *acrimony*.

- (a) Disloyal (b) Wrong action  
(c) Disrespect (d) Bitterness of speech

43. Gandhiji has become exemplary because he used to live in *austerity*.

- (a) Severe simplicity  
(b) Disease  
(c) A group of all religious  
(d) Luxury and ease

44. The project has been started under the *aegis* of government of India.

- (a) Support (b) Guidance  
(c) System (d) Plan

45. Over-eating is *baneful* for health.

- (a) Harmless (b) Causing evil effect  
(c) Indigestible (d) Harmful

**Directions for Questions (46 to 50):** Mark the word or phrase which is opposite in meaning to the lead word in the following questions:

46. Loquacious

- (a) Luscious (b) Pompous  
(c) Taciturn (d) Lusty

47. Temerity

- (a) Servility (b) Humility  
(c) Absurdity (d) Affinity

48. Credulous

- (a) Skeptical (b) Capricious  
(c) Plaint (d) Servile

49. Fortuitous

- (a) Unfortunate (b) Long winded  
(c) Intricate (d) Designed

50. Coddle

- (a) Huddle (b) Wet  
(c) Fry (d) Whip





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**Directions for Questions (51 to 55):** Choose the most appropriate word from amongst the alternatives provided at the end of each sentence, which when supplied in the blank would make it meaningful:

51. I had finished my studies before she .....to see me.  
(a) Had come (b) Was coming  
(c) Came (d) Comes
52. You had better ....this work.  
(a) Finished (b) Finish  
(c) Finishes (d) Have finished
53. The Trade Fair begins on Sunday and ..... on Saturday next.  
(a) End (b) Ending  
(c) Ends (d) Ended
54. As the day.....it became hotter and hotter  
(a) Advance (b) Advances  
(c) Advanced (d) Advancing
55. Fish and rice .....his favourite food.  
(a) Is (b) Are  
(c) Has (d) Having

**Directions for Questions (56 to 58):** Each of these questions consists of four numbered word with different spellings. Choose the numbered word, which you consider to be correctly spelled:

56.  
(a) Freight (b) Fraight  
(c) Fereight (d) Fareight
57.  
(a) Ierpperable (b) Ireperable  
(c) Irreparable (d) Irreparable
58.  
(a) Etiquitte (b) Etiquette  
(c) Ettequette (d) Etiquette

**Directions for Questions (59 to 65):** The following sentence have three divisions : (a), (b), (c). find out which part has an error in it. If there is no error, your answer will be (d), i.e., No error.

59. (a) Ramesh came across (b) with a beggar  
(c) on the crossing (d) no error
60. (a) The sceneries (b) of hill station  
(c) is charming (d) No error
61. (a) Cattles (b) are grazing  
(c) in he field (d) NO error
62. (a) Each (b) of the boys  
(c) are intelligent (d) No error
63. (a) Dinesh has been (b) suffering from fever  
(c) since ten days (d) No error
64. (a) Mohan told (b) the story  
(c) in details (d) no error
65. (a) Harish is (b) accustomed with  
(c) hard work (d) No error

**Directions for Questions (66 to 70):** Choose the correct preposition:

66. He got up restlessly and began to walk....his room.  
(a) About (b) Around  
(c) Along (d) From
67. I complimented him...his bright success in the examination.  
(a) At (b) On  
(c) About (d) For
68. ....the event of his resigning his job, his family would starve.  
(a) At (b) On  
(c) With in (d) In
69. I tried my best to dissuade him....going to Mumbai but to no purpose.  
(a) For (b) From  
(c) Of (d) With
70. If you need a coat you will have to buy it ....the market as I cannot give you mine.  
(a) In (b) From  
(c) On (d) Off

**Directions for Questions (71 to 72):** Out of the given alternatives (a), (b), (c) and (d) choose the correct word which very closely fits each definition.

71. A person who is very fond of sensuous enjoyments:  
(a) Hedonist (b) Epicure  
(c) Lusty (d) Stoic
72. A decision on which one cannot go back:  
(a) Irrevocable (b) Incorrigible  
(c) Infringible (d) Infalible

**Directions for Questions (73 to 75):** select from the alternatives provided the word which best completes the meaning of the sentences as a whole.

73. As I looked down the height my head began to .....  
(a) Swim (b) Turn  
(c) Circle (d) Make rounds
74. Your answer-book will be.....with the help of a computer.  
(a) Judges (b) Tested  
(c) Evaluated (d) Seen
75. He appealed to the president as a last  
(a) Resort (b) Recourse  
(c) Resource (d) Act

### COMPUTER AWARENESS

76. An example of an embedded system is..  
(a) A calculator (b) A machine tool  
(c) A CD-ROM (d) All of the above





77. Which of the following is not used as secondary storage?  
(a) Semi conductor memory  
(b) Magnetic Disk  
(c) Magnetic drums  
(d) Magnetic tapes
78. A collection of eight bits is called  
(a) Byte (b) Word  
(c) Record (d) File
79. A collection of wires that connects several devices is called  
(a) Link (b) Bus  
(c) Bidirectional wires (d) Cables
80. System software can be categorized into:  
(a) Operating system and system services  
(b) Network systems and communication services  
(c) Database system and backup services  
(d) None of these
81. In computer terminology a compiler means  
(a) A person who computes source program  
(b) A programmer  
(c) Key punch operator  
(d) A program which translates the source program into object program
82. Which of the following is responsible for co-ordinating various operating using timing signals?  
(a) Arithmetic-logic unit (b) Control unit  
(c) Memory unit (d) I/O unit
83. Computer can not do anything without a  
(a) Chip (b) Memory  
(c) Output devices (d) Program
84. Software is  
(a) Program  
(b) Program and documentation  
(c) Program, documentation and operating manual  
(d) None of the above
85. Everything computer does is controlled by is  
(a) RAM  
(b) ROM  
(c) CPU  
(d) Storage devices
86. The ascending order of a data hierarchy is  
(a) Bit-byte-field-record-file-database  
(b) bit-byte-record-field-file database  
(c) bytes-bit-field-record-file-database  
(d) bytes-bit-record-field-file-database
87. who is accredited with developing the architecture of the modern computer?  
(a) Sir Clive Sinclair  
(b) Bill Gates  
(c) John Von Neumann  
(d) All of the above
88. What are some popular office orientated software applications?  
(a) Compilers, interpreters, editors  
(b) Networks software, backup system  
(c) Word processors, spreadsheets, databases, DTP  
(d) None of these
89. Which of the following holds the ROM, CPU, RAM and expansion cards?  
(a) Hard Disk  
(b) Cache memory  
(c) Mother board  
(d) All of the above
90. The first computer made available for commercial use was  
(a) Mark-I  
(b) ENIAC  
(c) EDSAC  
(d) UNIVAC
91. Where does a computer add and compare?  
(a) Hard disk  
(b) Floppy disk  
(c) CPU chip  
(d) Memory chip
92. The register that contains the address of the instruction that is being executed currently is called  
(a) Program counter  
(b) Instruction register  
(c) Accumulator register  
(d) Stack pointer
93. Memories in which any location can be reached in a fixed amount of time after specifying its address is called  
(a) Sequential-access memory  
(b) Random-access memory  
(c) Secondary memory  
(d) Mass storage
94. A storage device used to compensate the difference in flow of data is known as  
(a) Main storage  
(b) Auxiliary storage  
(c) Buffer  
(d) Core memory
95. The register which holds the address of location to or from which data are to be transferred is known as  
(a) Index register  
(b) Instruction register  
(c) Memory address register  
(d) Memory buffer register
96. The number of pixels on a computer screen determines a screen's  
(a) Color (b) Memory  
(c) Resolution (d) Graphics adapter card
97. The computer device primarily used to provide hard copy is the  
(a) CRT (b) Line printer  
(c) Computer console (d) Card reader
98. A computer program consists of  
(a) System flowchart





- (b) Program flowchart
- (c) Algorithms written in computer's language
- (d) Discrete logic steps
- 99. Software can be divided into two areas:
  - (a) Network software and security software
  - (b) Systems software and application software
  - (c) Business software and games software
  - (d) None of these
- 100. DLL stands for
  - (a) Database link library
  - (b) Dynamic link library
  - (c) Data link library
  - (d) None of these
- 101. The instructions for starting the computer are housed on
  - (a) Random-access memory
  - (b) CD-ROM
  - (c) Read-only memory chips
  - (d) All of the above
- 102. Group of instructions that directs a computer is called
  - (a) Storage
  - (b) Memory
  - (c) Logic
  - (d) Program
- 103. Where would you find a magnetic strip?
  - (a) Credit card
  - (b) Speakers
  - (c) Smart card
  - (d) None of these
- 104. What would be the best way to move around a 3-D environment?
  - (a) Use a space mouse
  - (b) Use a tracker ball
  - (c) Use a keyboard
  - (d) None of these
- 105. The first computer used a store a program was
  - (a) EDSAC
  - (b) ENIAC
  - (c) EDVAC
  - (d) ACE
- 106. The register that contains the address of the next instruction to be executed is called
  - (a) Program counter
  - (b) Instruction register
  - (c) Accumulator
  - (d) Stack pointer
- 107. What is the function of systems software?
  - (a) To collect data
  - (b) To execute programs
  - (c) To maintain security
  - (d) None of these
- 108. Where was the India's first computer installed and when?
  - (a) Institute of Social Science, Agra, 1955
  - (b) Indian Institute of Statistics, Delhi, 1957
  - (c) Indian statistical Institute, Calcutta, 1955
  - (d) Indian Institute of Sciences, Bangalore, 1971
- 109. What input device could tell you the price of a bar of chocolate?
  - (a) Mouse
  - (b) Bar code reader
  - (c) Optical mark reader
  - (d) None of these
- 110. Super computers are primarily useful for
  - (a) Input-output intensive processing
  - (b) Data retrieval operations
  - (c) Mathematical-intensive scientific

- applications
- (d) All of the above
- 111. Who is called the "grand father" of the computer?
  - (a) Blaise Pascal
  - (b) Charles Babbage
  - (c) Joseph jacquard
  - (d) Dr. Herman Hollerith
- 112. What input device can be use for marking a multiple choice test?
  - (a) Mouse
  - (b) Bar code reader
  - (c) Optical mark reader
  - (d) None of these
- 113. Application software are programs that are written:
  - (a) To maintain a backup copy of all the information
  - (b) To do a particular job such as editing, storing information
  - (c) To help someone who is applying for employment
  - (d) None of these

### **LOGICAL AND ANALYTICAL ABILITY**

**Directions for Questions (114 to 117):** Read the following statement and answer the questions given below:

Radha and Minnilal have two children-Simmi and Divya. Divya is married to Anuj who is the son of Madhu and Jabbar. Resham is the daughter of Anuj. Kiran who is Anuj's sister is married to Subodh and has two sons Tarun and Aman. Tarun is grandson of Madhu and Jabbar.

- 114. How is Subodh related to Jabbar?
  - (a) Father-in-law
  - (b) Son
  - (c) Son-in-law
  - (d) None of these
- 115. Which of the following statement is definitely true?
  - (a) Resham is the Cousin of Kiran
  - (b) Madhu is the mother-in-law of Subodh
  - (c) Aman is the son of Simmi
  - (d) All the three are true
- 116. What is the relationship between Aman and Resham?
  - (a) Cousin
  - (b) Father-Daughter
  - (c) Uncle-Niece
  - (d) None of these
- 117. How is Kiran related to Divya?
  - (a) Sister
  - (b) Sister-in-law
  - (c) Grandmother
  - (d) None of these

**Directions for Questions (118 to 120):** A dice has six distinct numbers (positive integers) inscribed on its faces, the sum of numbers on opposite faces being 36, 40 and 41. Another identical dice (with identical numbering) is brought and tossed together twice. The sum of numbers thrown up was found to be 33 and 39 while sums of hidden numbers were 43 and 38 respectively





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118. Which of the following will definitely be a difference between two of the inscribed numbers?  
 (a) 6 (b) 4  
 (c) 2 (d) None of these

119. If one of the sum of two inscribed number is 37, then which of the following must also be a sum of two numbers?  
 (a) 45 (b) 46  
 (c) 42 (d) 44

120. Let the difference between two numbers on the opposite faces be 5 and another two on the opposite faces be 14. The least number inscribed on the dice will be:  
 (a) 15 (b) 16  
 (c) 13 (d) 14

121. In the question given below a word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives as in the 2 matrices given below. The columns and rows of matrix I are numbered from 0 to 4 and that of matrix II from 5 to 9. A letter from these matrices can be represented first by its row and next by column number. Identify the set for the word FARM.

	0	1	2	3	4
0	C	A	F	E	D
1	C	D	A	E	D
2	D	E	C	F	E
3	A	D	D	D	C
4	D	C	A	C	A

	5	6	7	8	9
5	T	R	R	S	M
6	S	T	M	R	S
7	R	S	P	T	P
8	P	S	T	R	T
9	P	M	P	M	S

FARM

- (a) 23, 12, 68, 96 (b) 44, 43, 87, 57  
 (c) 02, 30, 85, 65 (d) 20, 31, 76, 68

**Directions for Questions (122 to 123):** A, B, C and D have certain sums of money each. When A divided his money among B, C and D according to the ratio of money they already had, their total amounts are found to be Rs. 45, Rs. 60 and Rs. 75 respectively. If at least one of (B, C, D) can also split his money likewise on the condition that others get only integral number of rupees, then:

122. The money possessed by A initially was  
 (a) Rs. 108 (b) Rs. 72  
 (c) Rs. 36 (d) Cannot be determined
123. Who will be able to split his money likewise?

- (a) D (b) C  
 (c) B (d) B or C

**Directions for Questions (124 to 126):** M1, M2, M3 and M4 bought a computer and decided to share the time of each day according to the money they contributed. The price of the computer in rupees as well as the hours of the day, the computer is used (greater than 10), are integers. If M1 contributed Rs. 5,000. M2 contributed 25 percent of the total money M3 uses 20 percent of the time of the computer and M4 uses it for 2 hours, then:

124. M4 contributed:

- (a) Rs. 1,800 (b) Rs. 2,000  
 (c) Rs. 1,500 (d) Rs. 1,600

125. If another person M5 wanted to use the remaining free hours at the computer each day by paying them a rent of Rs. 100 for certain number of days and after which he could have it free because he would have contributed by them the money had he contributed the same money at the purchase of it for his share of time of computer, then he would have paid the rent for:

- (a) 48 days (b) 54 days  
 (c) 42 days (d) 45 days

126. M1 uses the computer for:

- (a) 6 hours 30 minutes (b) 6 hours 45 minutes  
 (c) 6 hours (d) 6 hours 15 minutes

**Directions for Questions (127 to 130):** 125 cubes of similar size are arranged in the form of a bigger cube (5 cubes on each side, i.e.  $5 \times 5 \times 5$ ). From one corner of the top layer of this cube, four smaller cubes ( $2 \times 2 \times 1$ ) are removed. From the column on the opposite side, two cubes ( $1 \times 1 \times 2$ ) are removed and from the third corner, three cubes ( $1 \times 1 \times 3$ ) are removed and from the fourth column four cubes ( $1 \times 1 \times 4$ ) are removed. All exposed faces of the block thus formed are coloured red.

127. How many cubes do not have any coloured face?  
 (a) 38 (b) 44  
 (c) 25 (d) 35
128. How many cubes have only two coloured faces?  
 (a) 32 (b) 36  
 (c) 18 (d) 29
129. How many cubes in the top layer have three red faces each?  
 (a) 6 (b) 8  
 (c) 3 (d) 4
130. How many small cubes are left in the block?  
 (a) 109 (b) 114  
 (c) 112 (d) 110





**Directions for Questions (131 to 134):** A company wants to select a team of four mechanical engineers from its South Indian Factory for transfer to North India, where they are going to set up a new plant. The company is managed by professional managers and is very particular about human resources and industrial relations. There are seven engineers of equal ability: X, Y and Z (who are in Senior Executive Cadre) and A, B, C and D (who are in junior Executive Cadre). The company requires that there should be two Senior Executives and two Junior Executives in each team. It is also necessary that all the engineers in a particular team are friendly with each other, in order to have a real team spirit and avoid any industrial relations problem in the new factory being set up in the North. Following is the situation of relations between the seven engineers:

- I. Y and A are not friendly.
- II. Z and C are not friendly
- III. A and B are not friendly

131. If A is on the team then which other engineers must be on the team as well?  
(a) X, Z and B (b) X, Z and C  
(c) X, Y and D (d) X, Z and D
132. Which statement(s) must be false?  
I. Y and C are never selected together  
II. Z and B are never selected together  
III. Z and D are never selected together  
(a) III only (b) II only  
(c) I only (d) I, II and III
133. If B is Selected and Y is rejected, the team will consist of:  
(a) X, Z, C and B (b) Z, C, D and B  
(c) X, Z, A and B (d) X, Z, D and B
134. If both Y and Z are selected, which of the other engineers must be on the team with them?  
(a) Both B and A (b) Both B and D  
(c) Both C and D (d) Only D

**Directions for Questions (135 to 138):** Study the following information carefully and answer the questions that follow:

Mr. Ghosh recently redecorated his house by coordinating orange and three other colours for the walls, carpets and curtains of four different rooms. From the information below, determine the colours of the carpet, walls and curtains for each of the room and answer the following questions:

- (1) Yellow was the only colour used in all the four rooms. It was used at least once for walls, carpets and curtains.
- (2) Three different colours were used in each room but only the dining room and the

bedroom were decorated in the same three colours.

- (3) The same color was chosen for the curtains in the bedroom, the carpet in the living room and the walls in the dining room. The colour was not used at all in the study room.
  - (4) The only room with both green and grey in its colour scheme had carpet of the same colour as in the dining room.
  - (5) Grey was the only colour used exactly twice-both times for curtains.
  - (6) The study room walls were painted the same colour as the living room walls.
135. Which of the two rooms had green carpets?  
(a) Dining room and bedroom  
(b) Study and living room  
(c) Living room and dining room  
(d) Study and dining room
136. The dining room had.....curtains  
(a) Green (b) Yellow  
(c) Orange (d) Grey
137. Which of the following rooms had orange curtains and green walls?  
(a) Dining room (b) Living room  
(c) Bedroom (d) Study
138. Which room did not use grey colour at all?  
(a) Dining room (b) Living room  
(c) Study (d) Cannot say

**Directions for Questions (139 to 140):** Read the following information carefully and answer the questions given below:

A king started construction of a temple on 17<sup>th</sup> January, 1723. The king was in a hurry, so he stopped the construction only for 10 days in a year except in the last year when it went on without disruption. After 3099 working days, 20 artists and 150 labourers could complete the construction. The total expenditure was 21 lakh rupees. The king was very happy. He announced that the first worship would be on coming Monday, because it was his birthday. The Rajpurohit was against the selection of the date for the first worship. The king did not agree with the Rajpurohit. He started the worship at 7 AM in the morning. The temple collapsed at 7:30 AM and the king died on his 74<sup>th</sup> birth anniversary.

139. Find the day on which the construction was completed:  
(a) Tuesday (b) Monday  
(c) Sunday (d) None of these
140. The king was born on?  
(a) 8<sup>th</sup> October, 1657  
(b) 30<sup>th</sup> September, 1657  
(c) 1<sup>st</sup> October, 1657  
(d) None of these





**Directions for Questions (141 to 144):** A goldsmith has five gold rings, each having a different weight:

**Statement 1:** Ring D is weight-twice as much as ring E.

**Statement 2:** Ring E is weighing four and one-half times as much as ring F.

**Statement 3:** Ring F is weighting half as much as ring G.

**Statement 4:** Ring G is weighting half as much as ring H.

**Statement 5:** Ring H is weighting less than ring D but more than ring F.

Based on the above statements, answer the following questions:

141. Which of the numbered statement above is not necessary to determine the correct order of the ring according to their weight?  
(a) Statement 3 (b) Statement 5  
(c) Statement 1 (d) Statement 4
142. Which of the following represents the descending order of weights of the rings?  
(a) H, F, G, D and E (b) D, E, H, G and F  
(c) D, E, G, H and F (d) E, G, H, D and F
143. Which of the following fractions expressed in the form  $P/Q$  is most nearly approximated by the decimal  $PQ$ , where  $P$  is the tenth's digit and  $Q$  is the hundredth's digit?  
(a)  $8/9$  (b)  $4/5$   
(c)  $1/8$  (d)  $2/9$
144. If these rings are sold according to their weight, which ring will fetch the highest value in rupees?  
(a) F (b) D  
(c) G (d) H

**Directions for Questions (145 to 147):** A, B, C, D and E are five persons holding certain amount of money each (all different). When B, C, D and E exchanged their amounts amongst themselves so that no one had their original amount, it is observed that:

- I. B possesses the highest amount amongst all persons.  
II. D possesses the lowest amount amongst all persons, which is Rs. 20 less than what A has.  
III. E and C possess Rs. 50 and Rs. 70 respectively. When A, C, D and E exchanged their initial amounts amongst themselves so that no one had their original amount, it is observed that:  
I. A has the highest amount amongst all persons which is Rs. 40 more than what B has.  
II. C has Rs. 30 less than what A has.  
III. E has Rs. 10 less than what D has

145. The initial amount possessed by B was:  
(a) Rs. 60 (b) Rs. 50

- (c) Rs. 40 (d) Cannot be determined
146. The initial amount possessed by C was:  
(a) Rs. 80 (b) Rs. 70  
(c) Rs. 50 (d) Cannot be determined
147. The initial amount possessed by A was:  
(a) Rs. 80 (b) Rs. 60  
(c) Rs. 40 (d) Cannot be determined

**Directions for Questions (148 to 149):** in each of the following questions, there is a statement followed by two assumptions I and II. You are to consider each statement and the assumptions that follow and decide which of the assumptions is implicit in the statement, indicate, your answer as

- (1) If only I is implicit  
(2) If only II is implicit  
(3) If neither I nor II is implicit and  
(4) If both I and II are implicit

148. **Statement :**

We should use detergent to clean objects.

**Assumptions:**

I. Detergents help to dislodge grease and dirt.

II. Detergent form more lather.

- (a) 3 (b) 4  
(c) 1 (d) 2

149. **Statement:**

Every year doctors, scientists and engineers migrate from India to greener pastures

**Assumptions:**

I. Brain drain has affected India adversely

II. Better scales and better standards of living act as a bait to lure them

**Directions for Question 150):** In each question below are given two statements. Followed by four conclusions numbered I, II, III and IV

You have to take everything given in the statements to be true although it may seem at variance with commonly accepted facts. Then decide which of the conclusions follows from the statements. Mark the right answer from (A), (B), (C) and (D)

150. **Statements.**

- (1) All children are adults  
(2) All adults are fat.

**Conclusions:**

I. All fat persons are children

II. All children are fat.

III. only some children are fat

IV. Some fat persons are adults

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





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### ANSWER KEY

1(a)	2(d)	3(b)	4(c)
5(b)	6(c)	7(b)	8(d)
9(a)	10(b)	11(d)	12(b)
13(d)	14(d)	15(c)	16(c)
17(c)	18(b)	19(b)	20(b)
21(c)	22(a)	23(d)	24(c)
25(b)	26(b)	27(c)	28(b)
29(d)	30(a)	31(b)	32(a)
33(a)	34(b)	35(a)	36(a)
37(b)	38(b)	39(d)	40(a)
41(b)	42(d)	43(a)	44(a)
45(d)	46(c)	47(b)	48(a)
49(d)	50(d)	51(c)	52(a)
53(b)	54(c)	55(a)	56(a)
57(c)	58(b)	59(b)	60(d)
61(a)	62(c)	63(b)	64(c)
65(b)	66(a)	67(b)	68(a)
69(b)	70(b)	71(a)	72(a)
73(c)	74(c)	75(a)	76(a)
77(a)	78(a)	79(b)	80(a)
81(d)	82(b)	83(d)	84(c)
85(c)	86(a)	87(c)	88(c)
89(c)	90(a)	91(c)	92(b)
93(b)	94(c)	95(c)	96(c)
97(b)	98(d)	99(b)	100(b)
101(c)	102(d)	103(a)	104(a)
105(a)	106(a)	107(b)	108(c)
109(c)	110(c)	111(b)	112(c)
113(b)	114(c)	115(b)	116(a)
117(b)	118(b)	119(d)	120(c)
121(a)	122(c)	123(d)	124(d)
125(a)	126(d)	127(c)	128(a)
129(b)	130(c)	131(d)	132(d)
133(d)	134(b)	135(d)	136(b)
137(c)	138(a)	139(b)	140(a)
141(b)	142(b)	143(a)	144(b)
145(d)	146(b)	147(d)	148(c)
149(b)	150(a)		