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20 JANUARY 2019

Marks: 400

Time: 120 minutes

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| ROLL NO.: _____ SIGNATURE: _____ | NAME: _____ DATE / TIME: _____ |
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| INSTRUCTIONS FOR THE CANDIDATES | |
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| 1. | The question booklet contains English section (Q 1-40) and Mathematics Section (Q 41-100). |
| 2. | Before attempting the paper carefully read all the Instructions & Examples given on Side 1 of Answer Sheet (OMR Sheet) supplied separately. |
| 3. | At the start of the examination, please ensure that all pages of your Test booklet are properly printed; your Test booklet is not damaged in any manner and contains 100 questions. In case of any discrepancy the candidate should immediately report the matter to the invigilator for replacement of Test Booklet. No claim in this regard will be entertained at the later stage. |
| 4. | An OMR Answer Sheet is being provided separately along with this Test booklet. Please fill up all relevant entries like Roll Number, Test Booklet Code etc. in the spaces provided on the OMR Answer Sheet and put your signature in the box provided for this purpose. |
| 5. | Make sure to fill the correct Test booklet code on Side 2 of the OMR Answer Sheet. If the space for the Booklet Code is left blank or more than one booklet code is indicated therein, it will be deemed to be an incorrect booklet code & Answer Sheet will not be evaluated. The candidate himself will be solely responsible for all the consequences arising out of any error or omission in writing the test booklet code. |
| 6. | This Test Booklet consists of 08 pages containing 100 questions. Against each question four alternative choices (1), (2), (3), (4) are given, out of which one is correct. Indicate your choice of answer by darkening the suitable circle with BLACK/BLUE pen in the OMR Answer Sheet supplied to you separately. Use of Pencil is strictly prohibited. More than one answer indicated against a question will be deemed as incorrect response. |
| 7. | The maximum marks are 400. Each question carries four marks. There will be negative marking of minus one (-1) for each incorrect answer. |
| 8. | Do not fold or make any stray marks on the OMR Answer Sheet. Any stray mark or smudge on the OMR Answer Sheet may be taken as wrong answer. Any damage to OMR Answer Sheet may result in disqualification of the candidate. |
| 9. | On completion of the test, candidate must hand over the OMR Answer Sheet to the invigilator on duty in the room/hall. You may retain the Question Booklet. |
| 10. | Use of Mobile phones, wrist watches and calculators etc. are not allowed. |
| 11. | Keep all your belongings outside the Examination hall. Do not retain any paper except the ADMIT CARD. |

SECTION – ENGLISH

Directions (Question 1 to 7). In these questions, out of the four alternatives, choose the one which best expresses the meaning of the given word.

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| 1 | Apprise (1) winner(2)trophy (3) curious (4) inform |
| 2 | Discipline (1) dictator(2) rigid(3) obedience(4) sincere |
| 3 | Swift (1) quick (2) car (3) noise(4) hasty |
| 4 | Terse (1) sullen(2) brief(3) verbose (4) crying |
| 5 | Honour (1) important(2)rich(3) respect(4) mighty |
| 6 | Instill (1) lessen(2) induct(3) understand(4) introduce |
| 7 | Courage (1) mystery(2) brave(3) strong (4) powerful |

Directions (Question 8 to 12).From the four options given, choose a word / phrase which is similar in meaning to the under lined word in each sentence.

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| 8 | The treaty was <u>ratified</u> by the heads of state. (1) annulled (2) discussed (3) set aside (4) agreed to |
| 9 | We didn't believe his statements, but <u>subsequent</u> events proved that he was right. (1) earlier(2) many(3) few (4) later |
| 10 | He has suspended his secretary on <u>flimsy</u> grounds. (1) strong (2)fussy (3) funny (4) very weak |
| 11 | He is quite <u>meticulous</u> in his dealings with others. (1) indifferent(2) haughty (3) very careful (4) reserved |
| 12 | A bone got stuck in his <u>gullet</u> . (1) teeth(2) stomach(3) throat (4) chest |

Directions (Question 13 to 16). In these questions, out of the four alternatives, choose the one which can be substituted for the given words/sentences.

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| 13 | A person who believes that war should be abolished (1) war mongerer (2) pacifist (3) abolitionist(4) activist |
| 14 | A person who is interested in and good at many different things. (1) versatile(2) specialist (3) student (4) cadet |
| 15 | A ruler who has absolute authority. (1) aristocratic (2) leader(3) dictator (4) president |
| 16 | A person who is a good speaker. (1) witty (2) orator(3) wise man (4) politician |

Directions (Question 17 to 18). Find the correctly spelt word out of the four words given

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| 17 | (1) believe(2) belive(3) beleive(4) beelve |
| 18 | (1) tomorow(2) tommorrow(3) tommorow(4) tomorrow |

Directions (Question 19 to 23). Four alternatives are given for the idiom/phrase / word in italics in the sentence. Choose the one which best expresses the meaning of the idiom/phrase

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| 19 | The Louvre is <u>a</u> world's largest museum. (1) grand (2) one(3) only (4) the |
| 20 | Science and Technology <u>is</u> enriched man's life. (1)have(2) has(3) are(4) does |
| 21 | With his rash action he really <u>upset the apple cart</u> (1) threw the apples away(2) broke the cart (3) spoil carefully laid plans(4) executed the plan immediately |

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| 22 | The disgruntled man <i>threw a spanner in the works</i> (1) hit with a spanner(2) used his spanner with force (3) prevented the plan from succeeding(4) stopped working |
| 23 | To forgive <i>the</i> injury is often considered a sign of weakness. (1) this(2) an(3) thus(4) only |
| Directions (Question 24 to 27). Sentences are given with blanks to be filled in with an appropriate word(s). Choose the correct alternative out of the four. | |
| 24 | Concentration is _____ by alertness. (1) helped(2) help(3) will help (4) helps |
| 25 | Don't let setbacks _____ your determination to succeed. (1) effect(2) effected(3) affected(4) affect |
| 26 | Effective speaking _____ on effective listening. (1) depend(2)depends (3) depended (4) depending |
| 27 | They believe that logic _____ no place in faith. (1) have (2) had(3) having (4) has |
| Directions (Question 28 to 29). Some of the sentences have errors and some have none. Find out which part (1), (2) or (3) of a sentence has an error. If there is no error mark your answer (4) | |
| 28 | (1) Complaints usually come (2) from those which are (3) inefficient or unhappy (4) no error |
| 29 | (1)A hungry man becomes desperate(2) and his despair turns (3)in anger (4) no error |
| Directions (Question 30 to 32). Reorder P,Q,R,S to make a meaningful sentence. | |
| 30 | P: real murderer Q: who theR: isS: find out (1) PQRS (2) SQPR (3) QRPS (4) PSRQ |
| 31 | P: many cluesQ: there areR: pointing toS: the real culprit (1) QPRS (2) PSQR (3) QSPR (4) SPRQ |
| 32 | P: detective storyQ: goR: through the S: written below (1) RPSQ (2) SQRP (3) QRPS (4) SPRQ |
| Directions (Question 33 to 40). In these questions, you have two brief passages with 4 questions following each passage. Read the passage carefully and choose the best answer out of the four alternatives. | |
| <u>PASSAGE – 1</u> | |
| The price of rudeness was more than Alice could bear. She got up in great disgust and walked off. The Dormouse fell asleep instantly and neither of the other took any notice of her going. She looked back once or twice half hoping that they would call after her but they didn't. The last time she saw them, they were trying to put the Dormouse into the tea pot. | |
| 33 | The word 'disgust' means (1) revulsion(2) strong wind (3) hurry (4) anger |
| 34 | What was Dormouses response to Alice's walk out? (1) he instantly fell asleep (2) he pleaded Alice not to leave (3) he too left with Alice (4) he went into the tea pot |
| 35 | What did Alice do when she couldn't bear the price of rudeness? (1) she quarreled with others (2) she took up the matter with them (3) she left the place in great disgust(4) she stayed put and did nothing |
| 36 | What were they doing when Alice last saw them? (1) they fell asleep (2) they were trying to put the Dormouse into the tea pot (3) they left the place(4) they were taking tea |
| <u>PASSAGE – 2</u> | |
| Robin Hood, surprised at the stranger's courage, started fighting in earnest, using his stick with great skill. He was very quick on his feet, and hit the giant with many quick blows. But the giant proved to be equally skillful, though he was not as quick as Robin Hood. The two men, each trying to knock the other down into the stream, fought hard and long. At last Robin Hood gave such a blow on the giant's knees that he fell into the stream. But before his fall, the stranger succeeded in giving Robin Hood a blow on his head. Robin Hood reeled and fell into the stream too. With great difficulty both the men reached the bank. The stranger was limping and he was in great pain. But he did not lose courage. He once again got ready to fight. | |

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| 37 | Which of the statements is true (1) Robin Hood was scared of the giant (2) the giant was scared of Robin Hood (3) the stranger lost courage (4) the giant was as skillful as Robin Hood |
| 38 | The giant fell into the stream as (1) he was lifted and thrown into the stream (2) he lost balance (3) he wanted to end the fight (4) Robin Hood gave a decisive blow on the giants knees |
| 39 | On being surprised at the stranger's courage, Robin Hood: (1) started fighting vigorously (2) tried to make friends with the stranger (3) killed the stranger (4) gave up the idea of fighting |
| 40 | Robin Hood too fell into the stream because (1) the stranger gave a blow on Robin Hood's head (2) he wanted to run away (3) the giant pushed him (4) he wanted to save himself |

SECTION – MATHEMATICS

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| 41 | The square sheet of paper is converted into a cylinder by rolling it along its length. What is the ratio of the base radius to the side of square? 1) $\frac{1}{2\pi}$ 2) $\frac{\sqrt{2}}{\pi}$ 3) $\frac{1}{\sqrt{2}\pi}$ 4) $\frac{1}{\pi}$ |
| 42 | A bus starts from city X. The number of women in the bus is half of the number of men. In city Y, 10 men leave the bus and five women enter. Now, number of men and women is equal. In the beginning, how many passengers entered the bus? 1) 15 2) 30 3) 36 4) 45 |
| 43 | Four circles of radius 1 each are inscribed in a large circle. The large circle is tangent to every smaller circle. Each smaller circle is tangent to the large circle and to two small circles. What is the radius of the large circle? 1) $1+\sqrt{2}$ 2) $1+\sqrt{3}$ 3) $2+\sqrt{2}$ 4) $2+2\sqrt{2}$ |
| 44 | Excluding stoppages, the speed of a bus is 54 Km/h and including stoppages, it is 45 Km/h. For how many minutes does the bus stop per hour? 1) 9 2) 10 3) 12 4) 20 |
| 45 | If the sum of first m terms of an A.P. is same as the sum of its first n terms, then the sum of its first $(m+n)$ terms is 1) 1 2) 2 3) 0 4) $\frac{1}{2}$ |
| 46 | If P denotes "multiplied by", T denotes "Subtracted from", M denotes "added to" and B denotes "divided by" then $28B7P8T6M4=?$ 1) $-3/2$ 2) 30 3) 32 4) 34 |
| 47 | The sum of first 100 natural numbers is divisible by 1) 2, 4 and 8 2) 2 and 4 3) 2 only 4) None of these. |
| 48 | The point at which the two coordinates meet is called? 1) Abscissa 2) Ordinate 3) Co-ordinate 4) Origin |
| 49 | What is the area of the sector covered by the hour hand after it was moved through 3 hours, the length of the hour hand is 7cm? 1) 77cm^2 2) 38.5cm^2 3) 35cm^2 4) 70cm^2 |
| 50 | If A(5,2), B(2,-2), C(-2,t) are the vertices of a right angled triangle with $\angle B=90^\circ$, then the value of t? 1) 0 2) $\frac{1}{2}$ 3) 2 4) 1 |

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| 51 | A number is selected from first thirty natural numbers. What is the chance that it is multiple of either 3 or 13? 1) $\frac{17}{30}$ 2) $\frac{2}{5}$ 3) $\frac{11}{30}$ 4) $\frac{4}{15}$ |
| 52 | A shopkeeper marks his goods at 30% above cost price and allows discount of 15% for cash payment. What profit % does he make? 1) 12.5% 2) 10.5% 3) 11.5% 4) 9.5% |
| 53 | The circumference of the front wheel of a cart is 30 feet long. What is the distance travelled by the cart, when the front wheel has done five more revolutions than the rear wheel? 1) 20 feet 2) 25 feet 3) 750 feet 4) 900 feet |
| 54 | If $\sec\theta + \tan\theta = p$ find $\frac{p^2 - 1}{p^2 + 1}$ 1) $\sin\theta$ 2) $\sin^2\theta$ 3) $\cos\theta$ 4) $\cos^2\theta$ |
| 55 | If $\sin\theta$ and $\cos\theta$ are roots of equation $ax^2 + bx + c = 0$ then $b^2 - 2ac = ?$ 1) $-a^2$ 2) b^2 3) a^2 4) $-b^2$ |
| 56 | In a shower, 5 cm of rain falls, the volume of water that falls on 1.5 hectares of ground is? 1) 7.5 m^3 2) 750 m^3 3) 7500 m^3 4) 75000 m^3 |
| 57 | A monkey is climbing a rope of length 100 m. He climbs 3m in one minute and slips down by 1 m in another one minute because of rope being slippery(it takes him completely one minute time to slip down one meter). Now again he climbs 3m in one minute and in another one minute slips down one meter. This climbing and slipping continues till he reaches the top of rope. How much times he takes to reach the top of the rope? 1) 100 min 2) 98 min 40 sec 3) 98 min 38 sec 4) none of above |
| 58 | If the roots of the equation $ax^2 + bx + c = 0$ are equal then $c = ?$ 1) $-\frac{b}{2a}$ 2) $\frac{b}{2a}$ 3) $-\frac{b^2}{4a}$ 4) $\frac{b^2}{4a}$ |
| 59 | ΔABC is an equilateral triangle of each side $2\sqrt{3}$ cm. P is any point in the interior of ΔABC . If x, y, z are the distances of P from sides of triangles, then $x+y+z = ?$ 1) $2+\sqrt{3}$ 2) 5 cm 3) 3 cm 4) 4 cm |
| 60 | The coordinates of the points P and Q are respectively (4, -3) and (-1, 7). Find the abscissa of a point R on the line segment PQ such that $\frac{PR}{PQ} = \frac{3}{5}$ 1) 1 2) 0 3) -1 4) 2 |
| 61 | In a market, 20% opted for product A whereas 60% opted for product B. The remaining individuals were not certain. If the difference between those opted for product B and those who are uncertain was 720, how many individuals were covered in survey? 1) 3600 2) 1440 3) 1800 4) Data Inadequate |
| 62 | If $a^3 = 1+7$, $3^3 = 1+7+b$, $4^3 = 1+7+c$ then value of $a+b+c$ is? 1) 77 2) 110 3) 58 4) 75 |
| 63 | Two candles are of different lengths and thickness. The short and long ones can burn respectively for 3.5 hours and 5 hours. After burning for 2 hours, the lengths of candles become equal in length. What fraction of the long candle's height was the short candle initially? 1) $\frac{2}{7}$ 2) $\frac{5}{7}$ 3) $\frac{3}{5}$ 4) $\frac{4}{5}$ |
| 64 | If the equation $(1 + m^2)x^2 + 2mcx + (c^2 - a^2) = 0$ has equal roots then $c^2 = ?$ 1) $a(1 + m^2)$ 2) $a(1 - m^2)$ 3) $a^2(1 + m^2)$ 4) $a^2(1 - m^2)$ |

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| 65 | A right angled triangle has hypotenuse of length p cm and one side of length q cm. if $p - q = 1$; find the length of third side of triangle 1) $\sqrt{2q^2 + 1}$ 2) $\sqrt{2q - 1}$ 3) $\sqrt{2q^2 - 1}$ 4) $\sqrt{2q - 1}$ |
| 66 | Three equal circles of unit radius touch each other. Then, the area of the circle circumscribing the three circles is 1) $\frac{\pi}{3}(2 + \sqrt{3})^2$ 2) $\frac{2\pi}{3}(2 + \sqrt{3})^2$ 3) $6\pi(2 + \sqrt{3})^2$ 4) $\frac{1\pi}{6}(2 + \sqrt{3})^2$ |
| 67 | The sum of the roots of $\frac{1}{x+a} + \frac{1}{x+b} = \frac{1}{c}$ is zero. The product of the roots is? 1) 0 2) $\frac{1}{2}(a+b)$ 3) $-\frac{1}{2}(a^2+b^2)$ 4) $2(a^2+b^2)$ |
| 68 | The total of the ages of Amar , Akbar and Anthony is 80 years. What was the total of their ages three years ago? 1) 71 years 2) 72 years 3) 74 years 4) 77 years |
| 69 | Radha tell her friend that her age in years is equal to the sum of squares of the zeroes of polynomial $x^2+10x+24$. Find the age of Radha (in years) 1) 52 2) 56 3) 42 4) 46 |
| 70 | In ΔPQT , $PQ=PT$. The points R & S are on QT such that $PR=PS$. If $\angle PTS = 62^\circ$, $\angle RPS = 34^\circ$ then the measure of $\angle QPR$ is? 1) 17° 2) 13° 3) 15° 4) 11° |
| 71 | ABCD is a square with side x. With centres A, B, C, and D four circles are drawn such that each circle touches externally two of the remaining three circles. Let S be the area of the region in the interiors of the square and exterior of the circles. Then maximum value of S is 1) $x^2(1 - \pi)$ 2) $x^2\left(\frac{4-\pi}{4}\right)$ 3) $x^2(\pi - 1)$ 4) $\frac{\pi}{4}x^2$ |
| 72 | Four times the area of the curved surface of a cylinder is equal to 6 times the sum of the areas of its bases. If its height is 12 cm, then its volume (in cm^3) is? 1) 48π 2) 384π 3) 786π 4) 768π |
| 73 | A natural number when increased by 12, equal to 160 times its reciprocal. Find the number 1) 8 2) 6 3) 10 4) 9 |
| 74 | If length of the rectangle is increased by 50% and breadth is decreased by 20%. Then, what is the percentage change in the area? 1) 20% decrease 2) 20% increase 3) 80% increase 4) None of the above |
| 75 | The LCM of the two numbers is $(x+y)$ and HCF is $p(x-y)$. if one of the number is 'p' then the number is 1) $p \frac{x}{y}$ 2) $x^2 - y^2$ 3) pxy 4) $\frac{px + y}{px - y}$ |
| 76 | If both 11^2 and 3^3 are factors of the number $a \times 4^3 \times 6^2 \times 13^{11}$ then what is the smallest possible value of a? 1) 121 2) 3267 3) 363 4) 33 |
| 77 | In a class, there are 18 boys who are over 160 cm tall. If these constitute three-fourths of the boys and the total numbers of boys is two-thirds of the total numbers of students in the class, what is the numbers of girls in the class? 1) 6 2) 12 3) 18 4) 2 |
| 78 | CANCELLED |
| 79 | Lalit takes twice as long to row a distance against the stream as to row the same distance in favour of the stream. The ratio of the speed of boat (in still water) and the stream is 1) 2:1 2) 3:1 3) 3:2 4) 4:3 |

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| 80 | <p>The arithmetic mean of five numbers is -5. If the sum of two of them is 50. What is the average of other three</p> <p>1) 25 2) 10 3) -10 4) -25</p> |
| 81 | CANCELLED |
| 82 | <p>A bicycle wheel makes 5000 revolutions in moving 11 km. find the diameter of the wheel(in cm)?</p> <p>1) 70 cm 2) 35 cm 3) 140 cm 4) 105 cm</p> |
| 83 | <p>Mean of 11 observations is 17.50. If one observation 15 is deleted, find the mean of remaining observations.</p> <p>1) 17.5 2) 17.25 3) 17.75 4) None of these</p> |
| 84 | <p>A number when divided by 143 leaves 31 as remainder. What will be the remainder when the same number is divided by 13?</p> <p>1) 0 2) 1 3) 3 4) 5</p> |
| 85 | <p>If $2x = \sec A$, $\frac{2}{x} = \tan A$ then $2(x^2 - \frac{1}{x^2}) =$</p> <p>1) $\frac{1}{2}$ 2) $\frac{1}{4}$ 3) $\frac{1}{8}$ 4) $\frac{1}{16}$</p> |
| 86 | <p>A man on the top of a tower, standing on the sea shore finds that a boat coming towards him takes 10 minutes for the angle of depression to change from 30° to 60°. Find the time taken by boat to reach the shore from the position</p> <p>1) 5 minutes 2) 10 minutes 3) 8 minutes 4) 15 minutes</p> |
| 87 | <p>P started from his house towards west. After walking a distance of 25 m, he turned to the right and walked 10 m. He then again turned to the right and walked 15 m. After this he is turn to his right at 135° and to cover 30 m. In which direction he is going now?</p> <p>1) West 2) South 3) South-west 4) South-east</p> |
| 88 | <p>Ratio of the area of a circle and an equilateral triangle whose diameter and a side are respectively equal to?</p> <p>1) $\frac{\pi}{3}$ 2) $\frac{\pi}{6}$ 3) $\frac{\pi^2}{3}$ 4) $\frac{\pi}{\sqrt{3}}$</p> |
| 89 | <p>In a queue, Ankita is 10th from the front while Mohit is 25th from behind & Asha is just middle of the two. If there are 50 persons in the queue, what position does Asha occupy from the front?</p> <p>1) 20th 2) 19th 3) 18th 4) 17th</p> |
| 90 | <p>A solid metal sphere of surface area S_1 is melted and recast into a number of smaller spheres of same radius. S_2 is the sum of the surface areas of all the smaller spheres. Then</p> <p>1) $S_1 > S_2$ 2) $S_2 > S_1$ 3) $S_1 = S_2$ 4) Data is insufficient</p> |
| 91 | <p>5 Kg of tea and 8 Kg of sugar together cost Rs. 172.00. The price of the tea has risen by 20% and that of sugar by 10%. Hence the same quantity of tea and sugar now cost Rs. 199.20. What is the original price of tea per Kg?</p> <p>1) Rs. 18/Kg 2) Rs. 19/Kg 3) Rs. 20/Kg 4) Rs. 16/Kg</p> |
| 92 | <p>In $\triangle DEF$ and $\triangle PQR$, it is given that $\angle D = \angle Q$; $\angle R = \angle E$, then which of the following is NOT true?</p> <p>1) $\frac{EF}{PR} = \frac{DF}{PQ}$ 2) $\frac{DE}{PQ} = \frac{EF}{RP}$ 3) $\frac{DE}{QR} = \frac{DF}{PQ}$ 4) $\frac{EF}{RP} = \frac{DE}{QR}$</p> |
| 93 | <p>50 men took a dip in a water tank 40 m long and 20 m broad on a religious day. If the average displacement of water by a man is 4 m^3, then rise in water level of the tank will be?</p> <p>1) 20 cm 2) 25 cm 3) 35 cm 4) 50 cm</p> |
| 94 | <p>PQ is a tangent from P to a circle with centre O and QOR is a diameter of circle such that $\angle POR = 120^\circ$ then $\angle OPR$ is</p> <p>1) 30° 2) 60° 3) 45° 4) 90°</p> |

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| 95 | CANCELLED |
| 96 | The mean of first n odd natural numbers is $\frac{n^2}{81}$, then n is equal to? 1) 9 2) 81 3) 27 4) 18 |
| 97 | Which of the following statement is NOT true? 1) A line which intersects a circle in two points is called a secant of a circle. 2) A line intersecting a circle at one point only, is called a tangent to the circle 3) The point at which a line touches the circle, is called the point of contact. 4) A tangent to a circle can be drawn from a point inside the circle. |
| 98 | What is the capacity of a cylindrical vessel with a hemispherical portion raised upward at the bottom. 1) $\frac{\pi r^2}{3} (3h-2r)$ 2) $\frac{\pi r^3}{3} (2r-3h)$ 3) $\frac{\pi r}{3} (3h^2-2r)$ 4) $\frac{\pi r^2}{3} (3h-2r^2)$ |
| 99 | Among five friends, Lata, Alka, Rani, Asha and Sadhna, Lata is older than only three of her friends. Alka is younger to Asha & Lata. Rani is older than only Sadhna. Who amongst them is eldest? 1) Asha 2) Lata 3) Alka 4) Sadhna |
| 100 | The mean and mode of frequency distribution are 28 and 16 respectively. The median is 1) 22 2) 23.5 3) 24 4) 24.5 |