



Sri Raghavendra Tuition Center

HALF PORTION TEST - 5,6,7,8 - Copy - Copy - Copy

10th Standard

Maths

Date : 19-11-24

Reg.No. :

Exam Time : 03:00 Hrs

Total Marks : 100

T

EACHER NAME: P.DEEPAK M.Sc.,M.A.,B.Ed.,DCA.,TET-1.,TET-2.,

PHONE NUMBER : 9944249262

EMAIL: darthi99ktp@gmail.com

Centum Book Available

பகுதி - I/PART-1

14 x 1 = 14

குறிப்பு :

(i) அனைத்து வினாக்களுக்கும் விடையளிக்கவும்.

(ii) கொடுக்கப்பட்டுள்ள மாற்று விடைகளில் மிகவும் ஏற்புடைய விடையினைத் தேர்ந்தெடுத்துக் குறியீட்டுடன் விடையினையும் சேர்த்து எழுதவும்.

Note:

(i) Answer all the questions.

(ii) Choose the most appropriate answer from the given four alternatives and write the option code and the corresponding answer.

- 1) If (5, 7), (3, p) and (6, 6) are collinear, then the value of p is
(a) 3 (b) 6 (c) 9 (d) 12
- 2) The area of triangle formed by the points (-5, 0), (0, -5) and (5, 0) is
(a) 0 sq. units (b) 25 sq. units (c) 5 sq. units (d) none of these
- 3) The slope of the line which is perpendicular to a line joining the points (0, 0) and (-8, 8) is
(a) -1 (b) 1 (c) $\frac{1}{3}$ (d) -8
- 4) If $\sin \theta = \cos \theta$, then $2 \tan^2 \theta + \sin^2 \theta - 1$ is equal to
(a) $-\frac{3}{2}$ (b) $\frac{3}{2}$ (c) $\frac{2}{3}$ (d) $-\frac{2}{3}$
- 5) If $x = a \tan \theta$ and $y = b \sec \theta$ then
(a) $\frac{y^2}{b^2} - \frac{x^2}{a^2} = 1$ (b) $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$ (c) $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ (d) $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 0$
- 6) If the ratio of the height of a tower and the length of its shadow is $\sqrt{3} : 1$, then the angle of elevation of the sun has measure
(a) 45° (b) 30° (c) 90° (d) 60°
- 7) A tower is 60 m height. Its shadow is x metres shorter when the sun's altitude is 45° than when it has been 30° , then x is equal to
(a) 41.92 m (b) 43.92 m (c) 43 m (d) 45.6 m
- 8) If two solid hemispheres of same base radius r units are joined together along their bases, then curved surface area of this new solid is
(a) $4\pi r^2$ sq.units (b) $6\pi r^2$ sq.units (c) $3\pi r^2$ sq.units (d) $8\pi r^2$ sq.units
- 9) The height of a right circular cone whose radius is 5 cm and slant height is 13 cm will be
(a) 12 cm (b) 10 cm (c) 13 cm (d) 5 cm
- 10) The total surface area of a hemi-sphere is how much times the square of its radius.
(a) π (b) 4π (c) 3π (d) 2π

- 11) The ratio of the volumes of a cylinder, a cone and a sphere, if each has the same diameter and same height is
(a) 1:2:3 (b) 2:1:3 (c) 1:3:2 (d) 3:1:2
- 12) The probability of getting a job for a person is $\frac{x}{3}$. If the probability of not getting the job is $\frac{2}{3}$ then the value of x is
(a) 2 (b) 1 (c) 3 (d) 1.5
- 13) If a letter is chosen at random from the English alphabets {a, b,...,z}, then the probability that the letter chosen precedes x
(a) $\frac{12}{13}$ (b) $\frac{1}{13}$ (c) $\frac{23}{26}$ (d) $\frac{3}{26}$
- 14) A purse contains 10 notes of Rs. 2000, 15 notes of Rs. 500, and 25 notes of Rs. 200. One note is drawn at random. What is the probability that the note is either a Rs. 500 note or Rs. 200 note?
(a) $\frac{1}{5}$ (b) $\frac{3}{10}$ (c) $\frac{2}{3}$ (d) $\frac{4}{5}$

பகுதி - II/PART - II

13 x 2 = 26

குறிப்பு : எவையேனும் 10 வினாக்களுக்கு விடையளிக்கவும். வினா எண் 30 -க்கு கட்டாயமாக விடையளிக்கவும்.

Note : Answer any 10 questions. Compulsorily answer question number 30.

- 15) Find the slope of a line joining the given points (- 6, 1) and (-3, 2)
- 16) The line p passes through the points (3, - 2), (12, 4) and the line q passes through the points (6, -2) and (12, 2). Is parallel to q ?
- 17) Find the equation of a line passing through the point (3, - 4) and having slope $\frac{-5}{7}$
- 18) A cat is located at the point (-6, -4) in xy plane. A bottle of milk is kept at (5,11). The cat wishes to consume the milk travelling through shortest possible distance. Find the equation of the path it needs to take its milk.
- 19) Find the equation of a straight line which has Slope $\frac{-5}{4}$ passing through the point (-1, 2).
- 20) Find the slope of the straight line $6x + 8y + 7 = 0$.
- 21) Find the equation of a straight line passing through the point P(-5, 2) and parallel to the line joining the points Q(3, -2) and R(-5, 4).
- 22) prove that $\sqrt{\frac{1+\cos\theta}{1-\cos\theta}} = \operatorname{cosec} \theta + \cot\theta$
- 23) What is the probability that a leap year selected at random will contain 53 Saturdays. (Hint: $366 = 52 \times 7 + 2$)
- 24) prove that $\frac{\sec\theta}{\sin\theta} - \frac{\sin\theta}{\cos\theta} = \cot\theta$
- 25) Find the angle of elevation of the top of a tower from a point on the ground, which is 30 m away from the foot of a tower of height $10\sqrt{3}m$
- 26) From the top of a rock $50\sqrt{3}m$ high, the angle of depression of a car on the ground is observed to be 30° . Find the distance of the car from the rock.
- 27) The radius of a conical tent is 7 m and the height is 24 m. Calculate the length of the canvas used to make the tent if the width of the rectangular canvas is 4 m?
- 28) If the base area of a hemispherical solid is 1386 sq. metres, then find its total surface area?
- 29) The volume of a solid right circular cone is 11088 cm^3 . If its height is 24 cm then find the radius of the cone.
- 30) A die is rolled and a coin is tossed simultaneously. Find the probability that the die shows an odd number and the coin shows a head.

பகுதி - III/PART - II

12 x 5 = 60

குறிப்பு :

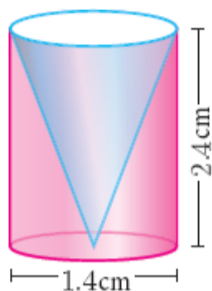
எவையேனும் 10 வினாக்களுக்கு விடையளிக்கவும். வினா எண் 49 -க்கு கட்டாயமாக விடையளிக்கவும்.

Note:

Answer any 10 questions. Compulsorily answer question number 49.

- 31) If the points P(-1, -4), Q (b, c) and R(5, -1) are collinear and if $2b + c = 4$, then find the values of b and c.
- 32) Find the value of k, if the area of a quadrilateral is 28 sq. units, whose vertices are (-4, -2), (-3, k), (3, -2) and (2, 3)
- 33) If the points A(- 3, 9) , B(a, b) and C(4, - 5) are collinear and if $a + b = 1$, then find a and b.

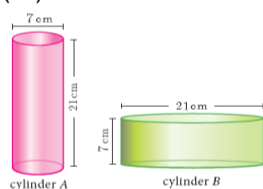
- 34) A quadrilateral has vertices A(- 4, - 2), B(5, - 1), C(6, 5) and D(- 7, 6). Show that the mid-points of its sides form a parallelogram.
- 35) Find the equation of the median and altitude of ΔABC through A where the vertices are A(6, 2), B(-5,-1) and C(1, 9)
- 36) Find the equation of the perpendicular bisector of the line joining the points A(-4, 2) and B(6, -4).
- 37) A kite is flying at a height of 75m above the ground, the string attached to the kite is temporarily tied to a point on the ground. The inclination of the string with the ground is 60° . find the length of the string ,assuming that there is no slack in the string.
- 38) From a point on the ground, the angles of elevation of the bottom and top of a tower fixed at the top of a 30m high building are 45° and 60° respectively. find the height of the tower. ($\sqrt{3} = 1.732$)
- 39) From a solid cylinder whose height is 2.4 cm and diameter 1.4 cm, a conical cavity of the same height and base is hollowed out. Find the total surface area of the remaining solid.



- 40) The frustum shaped outer portion of the table lamp has to be painted including the top part. Find the total cost of painting the lamp if the cost of painting 1 sq.cm is Rs. 2.



- 41) The radius and height of a cylinder are in the ratio 5 : 7 and its curved surface area is 5500 sq.cm. Find its radius and height.
- 42) A solid iron cylinder has total surface area of 1848 sq.m. Its curved surface area is five – sixth of its total surface area. Find the radius and height of the iron cylinder.
- 43) For the cylinders A and B
- find out the cylinder whose volume is greater.
 - verify whether the cylinder with greater volume has greater total surface area.
 - find the ratios of the volumes of the cylinders A and B.



- 44) If the radii of the circular ends of a frustum which is 45 cm high are 28 cm and 7 cm, find the volume of the frustum.
- 45) Marks of the students in a particular subject of a class are given below:

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Number of students	8	12	17	14	9	7	4

Find its standard deviation.

- 46) The measurements of the diameters (in cms) of the plates prepared in a factory are given below. Find its standard deviation.

Diameter(cm)	21-24	25-28	29-32	33-63	7-40	41-44
Number of plates	15	18	20	16	8	7

- 47) Find its standard deviation, In a study about viral fever, the number of people affected in a town were noted as

Age in years	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Number of people affected	3	5	16	18	12	7	4

Find its standard deviation

- 48) The time taken by 50 students to complete a 100 meter race are given below. Find its standard deviation.

Time taken(sec)	8.5-9.5	9.5-10.5	10.5-11.5	11.5-12.5	12.5-13.5
Number of students	6	8	17	10	9

- 49) Two unbiased dice are rolled once. Find the probability of getting
- (i) a doublet (equal numbers on both dice)
 - (ii) the product as a prime number
 - (iii) the sum as a prime number
 - (iv) the sum as 1

All The Best

