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SCHOLARSHIP EXAMINATION

FOR 10th STANDARD STUDENTS FEBRUARY - 2017

VERSION CODE	D
SUBJECTS	PCMB

No. of total questions: 80 **Maximum Marks : 320** **Time : 2.00 Hours**

OMR ഷീറ്റിലെ ഇടതുഭാഗം പൂരിപ്പിക്കേണ്ട വിധം:

METHOD OF FILLING THE LEFT HAND SIDE OF THE OMR

1. VERSION CODE: Version code is given on the top of the right side of the question paper. Darken the bubbles corresponding to the version code (VERSION CODE: ഈ പേജിന്റെ മുകളിൽ വലതുഭാഗത്ത് കൊടുത്ത Version code നെ സൂചിപ്പിക്കുന്ന കുമിള കറുപ്പിക്കുക).
2. ROLL NUMBER: Write your roll number in the specific column and darken the corresponding bubbles (ROLL NUMBER: നിങ്ങളുടെ റോൾ നമ്പർ കോളത്തിൽ എഴുതുകയും, താഴെയുള്ള കുമിളകൾ അതിനനുസരിച്ച് കറുപ്പിക്കുകയും ചെയ്യുക).
3. DATE: തിയ്യതി **2 6 0 2 1 7**
4. SUBJECT CODE: Darken the bubbles corresponding to the subject code PCMB (SUBJECT CODE: PCMB എന്ന് മുദ്രണം ചെയ്തതിന് നേരെയുള്ള കുമിള കറുപ്പിക്കുക).

വിദ്യാർത്ഥികൾക്കുള്ള നിർദ്ദേശങ്ങൾ
INSTRUCTIONS TO THE STUDENTS

1. Easy questions should be answerd first. Questions which are needed more time to answer should be attented considering the alloted time for the examination. Wrong answers carry minus mark. (താരതമ്യേന എളുപ്പമുള്ള ചോദ്യങ്ങൾ ആദ്യം ഉത്തരമെഴുതാൻ ശ്രദ്ധിക്കുക. കൂടുതൽ സമയമെടുത്ത് ചെയ്യേണ്ടതോ പ്രയാസമേറിയതോ ആയ ചോദ്യങ്ങൾ അവസാനഘട്ടത്തിലേക്ക് മാറ്റിവെച്ച് സമയബന്ധിതമായി പരീക്ഷയെഴുതുവാൻ ശ്രമിക്കുക. തെറ്റായ ഉത്തരത്തിന് നെഗറ്റീവ് മാർക്ക് വരുന്നതാണ്.)
2. When you bubble the answer ensure the questions number both in the question paper and in the OMR sheet are the same . (OMR ലെ കുമിള കറുപ്പിക്കുമ്പോൾ ചോദ്യപേപ്പറിലെ ചോദ്യ നമ്പറും OMR ലെ നമ്പറും ഒന്ന് തന്നെയാണെന്ന് ഉറപ്പ് വരുത്തുക).
3. The question booklet will be sealed at the middle of the right margin. candidates shoud not open the question booklet until the long bell is rung at 11.00 am to start answering. (11.00 am ന് Long Bell കേട്ടതിന് ശേഷം മാത്രമേ Question paper seal പൊട്ടിക്കാൻ പാടുള്ളൂ)
4. Write your name and roll number in the specific column given under the first page of question paper (നിങ്ങളുടെ പേരും റോൾ നമ്പറും താഴെ അതിനായി തന്നിട്ടുള്ള സ്ഥലത്ത് എഴുതുക).
5. White paper, Logarithm Table, Slide ruler, Calculator, Mobile Phone & other Electronic devices etc.. will not be allowed to bring in the examination hall (പേപ്പർ, ലോഗരിതം ടേബിൾ, സ്ലൈഡ് റൂളർ, കാൽക്കുലേറ്റർ, മൊബൈൽ ഫോൺ, ഇലക്ട്രോണിക്സ് സംവിധാനങ്ങളുടെ മറ്റു രൂപങ്ങൾ എന്നിവ പരീക്ഷാ ഹാളിൽ അനുവദനീയമല്ല).
6. Each correct answer carries 4 marks. 1 mark will be deducted for each wrong answer (ഇതിൽ ഓരോ ശരിയുത്തരത്തിനും 4 മാർക്ക് ആയിരിക്കും. ഓരോ തെറ്റായ ഉത്തരത്തിനും 1 മാർക്ക് (negative mark) വീതം കുറയ്ക്കുന്നതാണ്)
7. Mark for unattended questions will be zero (ഉത്തരമെഴുതാത്ത ഓരോ ചോദ്യത്തിനും 0 (പൂജ്യം) മാർക്ക് ആയിരിക്കും).
8 Each question is provided with 5 choices (A) (B) (C) (D) & (E) having one correct answer. (എല്ലാ ചോദ്യങ്ങൾക്കും (A) (B) (C) (D) (E) എന്നിങ്ങനെ 5 ഉത്തരങ്ങൾ കൊടുത്തിരിക്കും. ഇവയിൽ ഒന്നു മാത്രമാണ് ശരിയായ ഉത്തരം).

Name:..... Roll No. | | | | |


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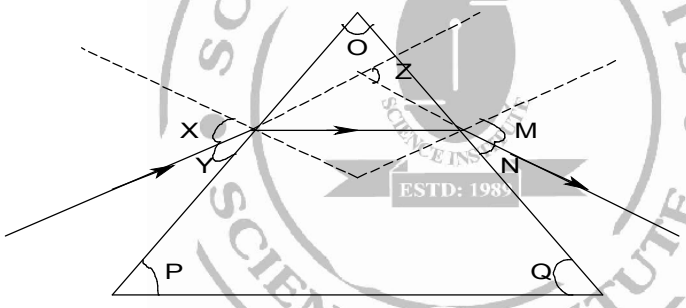
1. A student has obtained the image of a distant object with a concave mirror to determine its focal length. If he has selected a well illuminated red building as object, which of the following correctly describes the features of the image formed ?
[a] Virtual, inverted, diminished image in red shade
[b] Real, erect, diminished image in pink shade
[c] Real, inverted diminished image in red shade
[d] Virtual, erect enlarged image in red shade
[e] None of these

2. A student has obtained an image of a distant object on a screen to determine the focal length F1 of the given lens. His teacher after checking the image, gave him another lens of focal length F2 and asked to focus the same object on the same screen. The student found that to obtain a sharp image he has to move the lens away from the screen . From this finding we may conclude that both the lenses given to the student were.
[a] Concave and F1 < F2
[b] Convex and F1 <F2
[c] Convex and F1 >F2
[d] Concave and F1 >F2
[e] $|F_1| = |F_2|$

3. The path of a ray of light passing through a glass prism is shown below .



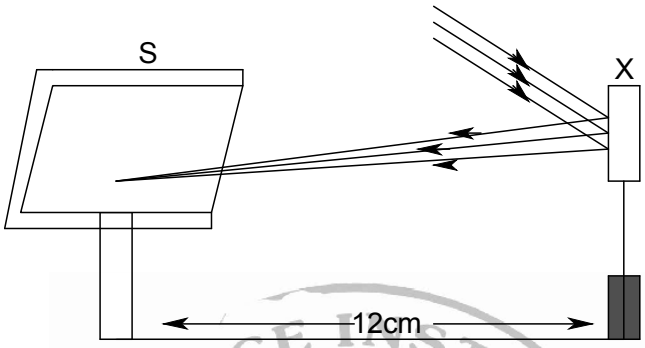
In this diagram the angle of prism, angle of incidence , angle of emergnece and angle of deviation respectively have been represented by
[a] O,Y, Z and N
[b] P,Y,M and Z
[c] O,X , M and Z
[d] P,X, Z and N
[e] O, Y N and M

SPACE FOR ROUGH WORK

4. The absolute refractive indices of two media 'A; and 'B' are 2.0 and 1.5 respectively. If the speed of light in medium 'B' is $2\times10^{8}\,m/s$, calculate the speed of light in.

[a] $2\times10^{8}\,m/s$ [b] $1\times10^{8}\,m/s$ [c] $1.5\times10^{8}\,m/s$
[d] $3\times10^{8}\,m/s$ [e] $2.5\times10^{8}\,m/s$

5. Study the following diagram and select the correct statement about the device 'X'



[a] Device 'X' is a concave mirror of radius of curvature 12cm
[b] Device 'X' is a concave mirror of focal length 6cm
[c] Device 'X' is a concave mirror of focal length 12cm
[d] Device 'X' is a convex mirror of focal length 12cm
[e] None of these

6. The device which converts sound waves into electrical pulses is
[a] Loud speaker [b] Microphone [c] Transforms
[d] Inductor [e] Transformer

7. What is the volatge between two phase lines in star connection
[a] 400V [b] 230V [c] 120V
[d] 200V [e] 430V

8. 5 Litres of 0.4 M H_2SO_4 contains
[a] 2 mol of H_2SO_4 [b] 0.4 mol of H_2SO_4 [c] 5 mol of H_2SO_4
[d] 2 mol of H_2SO_4 [e] 4 mol of H_2SO_4

SPACE FOR ROUGH WORK

9. One mole of P_4 molecules contains

[a] 1 molecule of P [b] 4 molecule of P [c] $\frac{1}{4}\times 6.022\times 10^{23}$ atoms of P

[d] 24.088×10^{23} atoms of P [e] 24.088×10^{23} molecules of P

10. An organic compound X when heated with a carboxylic acid in the presence of conci H_2SO_4 produced $CH_3-COO-CH_2-CH_2-CH_3$ as the product. The organic compound X is likely to be

[a] $CH_3-CH_2-CO-CH_3$ [b] CH_3-CH_2-OH [c] $CH_3-CH_2-CH_2-OH$

[d] CH_3-CH_2-CHO [e] CH_3-OH

11. An ion of manganese has the electronic configuration $1s^2\ 2s^2\ 2p^6\ 3s^2 3p^6\ 3d^4$. The compound with this ion is likely to be

[a] MnO_2 [b] Mn_2O_3 [c] Mn_2O_7

[d] $KMnO_4$ [e] K_2MnO_4

12. The electronic configuration of an element is $1s^2\ 2s^2\ 2p^6\ 3s^2 3p^3$. What is the number of protons in the atom of the element which is just below this element in the periodic table

[a] 33 [b] 16 [c] 34

[d] 49 [e] 23

13. The outermost electronic coefiguration of the most electronegative element is

[a] ns^2np^3 [b] ns^2np^4 [c] ns^1

[d] ns^2np^6 [e] ns^2np^5

14. A solution Y reacts with crushed egg shells to give a gas that turns lime water milky. The solution Y contains

[a] $CaCl_2$ [b] NaCl [c] HCl

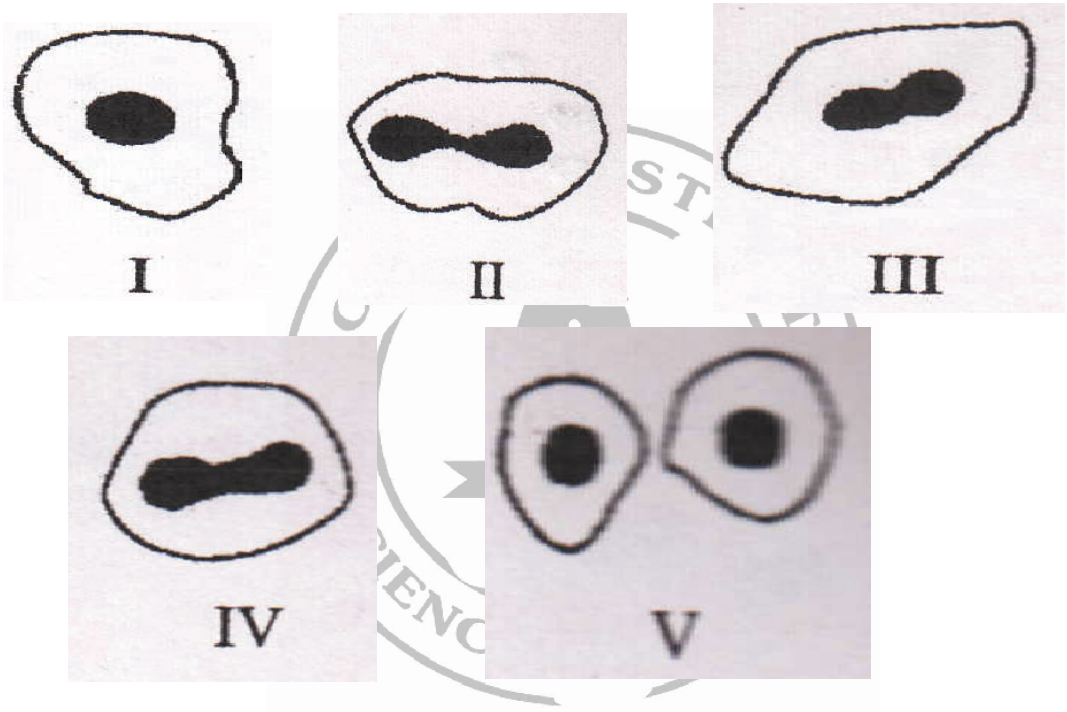
[d] KCl [e] CCl_4

SPACE FOR ROUGH WORK

15. Which one of the following is not a part of human female reproductive system
[a] Ovary [b] Oviduct [c] Uterus
[d] Epididymis [e] None of these

16. A student has to perform the experiment " To identify the different parts of an embryo of dicot seed". Select from the following an appropriate group of seeds:
[a] Pea, Gram, Wheat [b] Red kidney bean, maize, gram
[c] Maize, Wheat, Red kidney bean [d] Red kidney bean, Pea, gram
[e] None of these

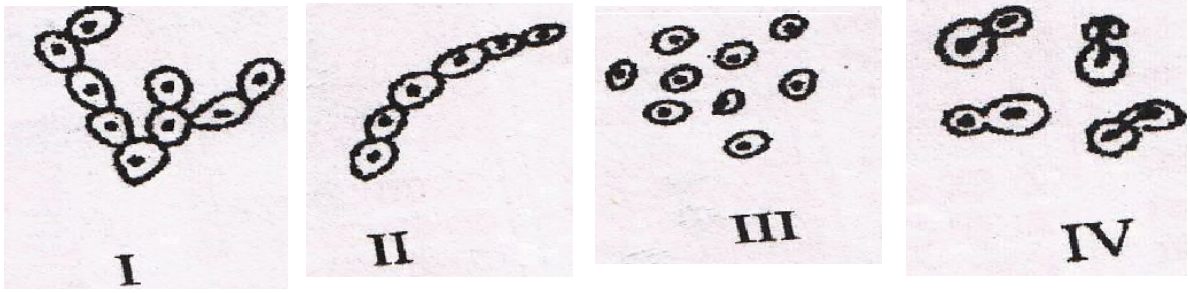
17. Study the following diagrams showing various stages of binary fission in Amoeba



The correct sequance of these diagrams should be :
[a] I, IV, III ,II, V [b] I, III, IV, II, V [c] I, II, IV, III, V
[d] I, II, III, IV, V [e] I, III, II, IV, V

SPACE FOR ROUGH WORK

18. Identify the figures showing the process of budding in yeast



[a] I, II and III [b] II, III and IV [c] I, II and IV
[d] III, IV, and I [e] None of these

19. Which one of the following pairs of vegitables is an example of homologous structures

[a] Potato and sweet potato [b] Carrot and radish [c] Carrot and tomato
[d] Tomato and radish [e] None of these

20. You are asked by your teacher to study the different parts of an embryo of a gram seed. Given below are the steps to be followed for the experiment .

I. Soak the gram seeds in plian water and keep them overnight
II. Cut open the soaked seed and observe its different parts
III. Take some dry gram seeds in a petri dish
IV. Drain the excess water
V. Cover the soaked seeds with a wet cotton cloth and leave them for a day. The correct sequence of these steps is

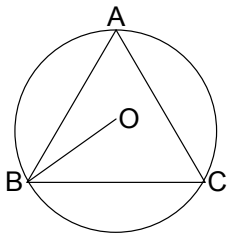
[a] III, I, V, IV, II [b] III, I, II, IV, V [c] III, IV, V, I, II
[d] III, I, IV, V, II [e] III, II, IV, I,V

SPACE FOR ROUGH WORK

21. Roots of the equation $x^2 + px + q = 0$ are -1 and 1. Then $3p - 4q =$.....

[a] 3 [b] 4 [c] 0
[d] 1 [e] -1

22. In the figure ΔABC is equilateral, O is the centre, OB = 3 cm then length of BC = ...



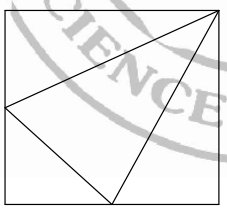
[a] $\frac{\sqrt{3}}{2}$ cm [b] $\sqrt{3}$ cm [c] $2\sqrt{3}$ cm

[d] $3\sqrt{3}$ cm [e] $\frac{2}{\sqrt{3}}$ cm

23. For what value of x, $P(x) = x^2 + 6x + 11$ is minimum

[a] 0 [b] 2 [c] $+3$
[d] 1 [e] -3

24. The vertices of the square and the midpoints of two sides are joined as shown figure. How many times of the area of the triangle so formed, is the area of the square?.



[a] 3 [b] 8 [c] $\frac{8}{3}$

[d] $\frac{2\sqrt{2}}{3}$ [e] $\frac{2}{2\sqrt{2}}$

SPACE FOR ROUGH WORK

25. $\frac{1}{1\times2}+\frac{1}{2\times3}+\frac{1}{3\times4}+.....+\frac{1}{99\times100}=$

[a] $\frac{1}{99}$ [b] $\frac{1}{100}$ [c] $\frac{99}{100}$

[d] $\frac{100}{99}$ [e] 1

26. The length of a large diagonal of a cube is $\sqrt{12}$ cm. What is the area of the cube?

[a] 12 cm [b] $6\sqrt{12}$ cm [c] 14 cm

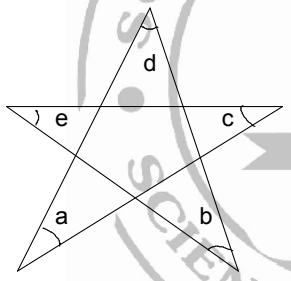
[d] 24cm [e] 144 cm

27. What is a probability of the month of March to have 5 Mondays or Tuesdays

[a] $\frac{2}{7}$ [b] $\frac{3}{7}$ [c] $\frac{4}{7}$

[d] $\frac{1}{7}$ [e] 0

28. Let a, b, c, d, e are the angles in a star. What is (a + b + c + d + e).?



[a] 180 [b] 90 [c] 360

[d] 270 [e] 45

29. Sum of the squares of sides of a right triangle is1250 and whose perimeter is 56. Find the sum of perpendicular sides?

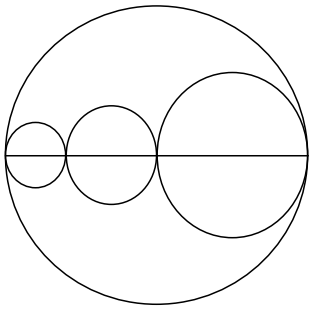
[a] 21 [b] 31 [c] 11

[d] 23 [e] 33

SPACE FOR ROUGH WORK

30. The product of four consecutive natural numbers is 1680 what is the first number among them
[a] 5 [b] 6 [c] 7
[d] 8 [e] 40

31. As shown in figure, centres of all the circles are in a line . If the sum of perimeters of small circles is equal to 20 cm . what is the perimeter of large circle. ?



[a] 10 [b] 20 [c] 30
[d] 40 [e] 50

32. The sum of n terms of an arithmetic sequence is denoted as s_n and nth term is x_n. If $S_2 + S_7 = 30$; $x_{15} = 2 \times x_8 - 1$. Find the common difference

[a] 15 [b] 8 [c] $\frac{3}{4}$

[d] $\frac{4}{3}$ [e] 1

33. $P(x) = x^6 + ax^5 + bx^4 - x^2 - x - 3$ is divisible by $x^4 - 1$ then $b^2 - a^2$ is
[a] 1 [b] 9 [c] 10
[d] 8 [e] 11

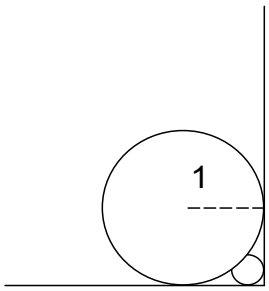
34. A right triangle with sides 3 cm, 4 cm , 5 cm is rotated with the side of 3cm as axis of rotation to form a cone. The volume of the cone so formed is
[a] 16 π cm^3 [b] 15 π cm^3 [c] 12 π cm^3
[d] 20 π cm^3 [e] 24 π cm^3

SPACE FOR ROUGH WORK

35. A water tank is hemispherical below and cylindrical at top . If the radius is 12m and capacity is $3312\pi m^3$. Then the height of the cylinder is ?

[a] 12m [b] 24m [c] 36m
[d] 15m [e] 18m

36. A unit circle is placed against a right angle and a small circle touching the sides of the right angle as well as with the unit circle. Find the radius of the small circle as shown?



[a] $3-2\sqrt{2}$ [b] $3+2\sqrt{2}$ [c] $2\sqrt{2}$
[d] $-2\sqrt{2}$ [e] $2+2\sqrt{2}$

37. There are two straight lines $x-y-1=0$ and $4x+3y-25=0$. Then which of the following straight line passing through the point of intersection of these two given straight lines?

[a] $2x-3y+1=0$ [b] $x+y+1=0$ [c] $4x+y+1=0$
[d] $2x+3y-1=0$ [e] $x-3y+2=0$

.

38. The sides of the rectangle are integers, and they are different . The perimeter of the rectangle is numerically equal to its area. then its length is=..... ?

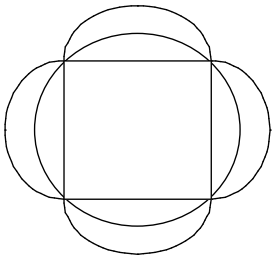
[a] 2 [b] 5 [c] 4
[d] 6 [e] 1

39. Given '$x-1$' is a factor of x^2+ax+b and $a-b=7$. Then a = ...and b = ...?

[a] $1,-2$ [b] $0,8$ [c] $4,-3$
[d] $3,-4$ [e] $1,1$

SPACE FOR ROUGH WORK

40. A square is inscribed in a circle whose diameter 2cm. Four semicircles are then constructed with diameters as the sides of the square. Find the area of shaded portion .?



[a] 2π cm^2 [b] 4cm^2 [c] 4π cm^2
[d] 2 cm^2 [e] π cm^2

41. Find the sum $\frac{1}{1}+\frac{1}{3}+\frac{1}{6}+\frac{1}{10}+\frac{1}{15}+.....$

[a] 2 [b] $\frac{1}{n+1}$ [c] 1

[d] $\frac{1}{n}$ [e] 0

42. If $x^2+x+1=0$ then x^3 is .....
[a] 2 [b] -1 [c] 0
[d] 1 [e] -2

43. The average age of 24 students and their class teacher is 16 years. If the class teacher's age is excluded, the average reduces by 1 year, the age of the class teacher is
[a] 55 [b] 50 [c] 45
[d] 40 [e] 35

44. $\left(2\frac{1}{2}\right)^2+\left(3\frac{1}{2}\right)^2+\left(4\frac{1}{2}\right)^2+\left(5\frac{1}{2}\right)^2=$

[a] 256 [b] 69 [c] $196\frac{1}{4}$

[d] $256\frac{1}{4}$ [e] $14\frac{1}{4}$

SPACE FOR ROUGH WORK

45. The average of 10 consecutive odd number is 120. Then which is the smallest odd number among this ?

[a] 1 [b] 11 [c] 111
[d] 101 [e] 113

46. The value of $\frac{50}{72}+\frac{50}{90}+\frac{50}{110}+\frac{50}{132}+.....+\frac{50}{9900}=$

[a] $\frac{55}{27}$ [b] $\frac{22}{7}$ [c] $\frac{1}{2005}$

[d] $\frac{23}{4}$ [e] $\frac{55}{22}$

47. In a box there are green, red and blue balls. The number of balls which are not green is 9. The number of balls which are not red is 8 and the number of balls which are not blue is 7. Then total number of balls in the box is?

[a] 24 [b] 7 [c] 9
[d]8 [e] 12

48. The speed of two runners are 15 km/hr and 16 km/hr respectively . To cover a distance 'x' one take 16 minutes more than the other, then the distance 'x' in kilometer is.....

[a] 32 [b] 48 [c] 82
[d] 64 [e] 128

49. A black and white photohraph is 70 % black and 30 % white. It is enlarged 3 times the percentage of white in the enlargment is ?

[a] 30% [b] $62\frac{2}{3}\%$ [c] $33\frac{1}{3}\%$
[d] 90% [e] 70%

50. The hypotenuse 'c' and one of the side of this right angled triangle is consecutive integers.Find the square of the third side ?(Take a,b,c are the sides of the right triangle)

[a] c - a [b] c^2+a^2 [c] ca

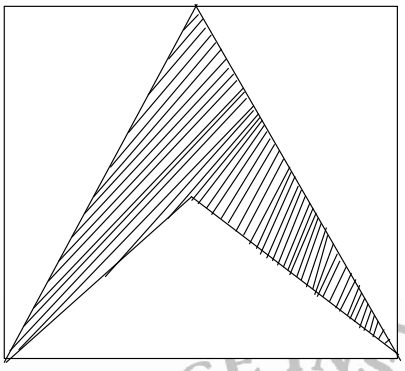
[d] $\frac{c}{a}$ [e] c + a

SPACE FOR ROUGH WORK

51. The equation of a straight line is $3y + 2x - 15 = 0$. Then the point, **which is not** in the line?

[a] (3, 3) [b] (–3,1) [c] (–9,11)
[d] (9,1) [e] (6, 1)

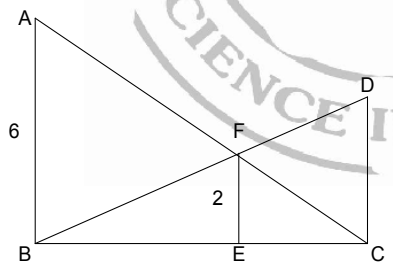
52. An arrow is formed in a 2×2 square, joined by the bottom corners to the midpoint of the top edge and centre of the square as shown. Find the area of the shaded portion?



[a] 1 [b] 2^2 [c] $\frac{1}{2}$

[d] $\frac{1}{2^2}$ [e] 2

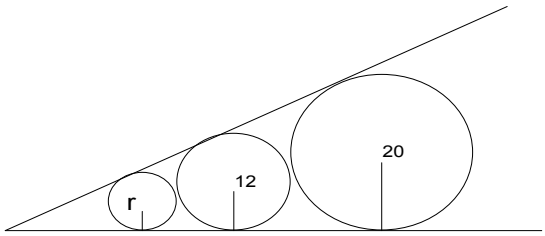
53. In the figure, AB, CD, EF are perpendicular to BC, If AB = 6cm, EF = 2cm then CD =



[a] 1cm [b] 2cm [c] 4cm
[d] 3cm [e] 5cm

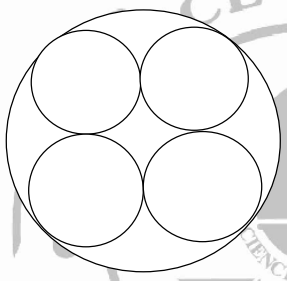
SPACE FOR ROUGH WORK

54. Three balls are placed inside a cone such that each ball is in contact as well as with the edge of the cone . If the radii of the balls are 20cm, 12cm and r cm respectively; find r ?



[a] 8cm [b] 4cm [c] 4.8 cm
[d] 7.2 cm [e] 6.4 cm

55. A telephone company places four round small cables in big round duct. Assuming the diameter of each cable is 2cm. Find the diameter of outer duct ?



[a] $2\sqrt{3}+4$ cm [b] $\sqrt{2}+8$ cm [c] $2\sqrt{2}+4$ cm
[d] $\sqrt{8}+2$ cm [e] $\sqrt{8}+3$ cm

56. All terms of an arithenmetic sequance are + ve numbers. The ratio of difference of the 8th term and 4th term to the 15th term is $\frac{4}{15}$ and the square of the difference of fourth and first term is 225, what is its first term ?

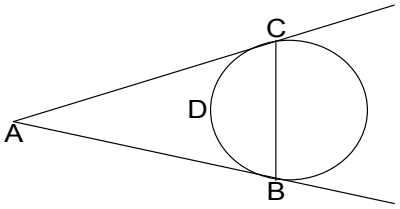
[a] 4 [b] 24 [c] 15
[d] 9 [e] 5

SPACE FOR ROUGH WORK

57. A train leaves a station 1 hour before the scheduled time . The driver decreases the speed by 4 km per hour. At the next station 120 km away, the train reached in the scheduled time . The original speed of the train in km/hr is .....

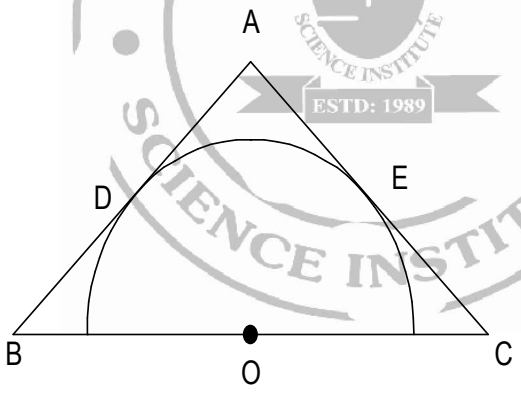
[a] 22 [b] 36 [c] 18
[d] 24 [e] 40

58. AB, AC are tangents , D is the midpoint of the minor arc BC. For the triangle ABC, D is..... ?



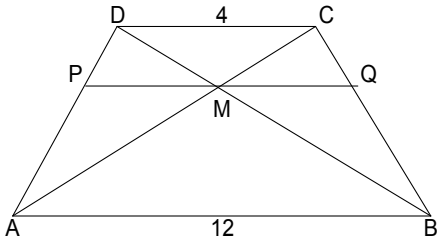
[a] perpendicular bisector [b] in centre [c] circum centre
[d] centroid [e] bisector

59. In the figure, 'O' is the centre of the semicircle and AB and AC are tangents. $\angle A = 90^0$, OB = 15 cm OC = 20cm . What is the radius of the semicircle?



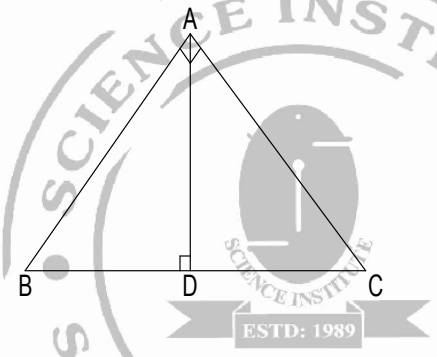
[a] 12 cm [b] 20cm [c] 17.5 cm
[d] 5cm [e] 15cm

60 ABCD is a trapezium whose diagonals meets at M. PQ is parallel to AB, AB = 12cm , CD = 4cm. Find PQ ?



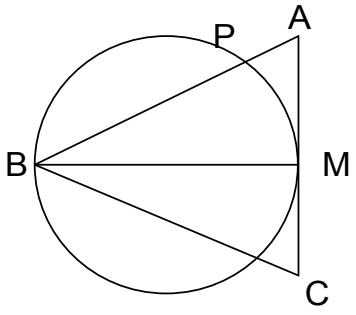
[a] 4.5 cm [b] 8cm [c] 10cm
[d] 6 cm [e] 7cm

61. In the figure , $\angle A = 90^0$, $AD \perp BC$, AB = 5cm , AC = 12cm then BD =.....



[a] 13 cm [b] $\frac{12}{13}$ cm [c] 8.5 cm
[d] $\frac{25}{13}$ cm [e] $\frac{7}{25}$ cm

62. In ΔABC , AB = AC, M is the midpoint of AC then $\frac{BP}{AP}$ = ... ?

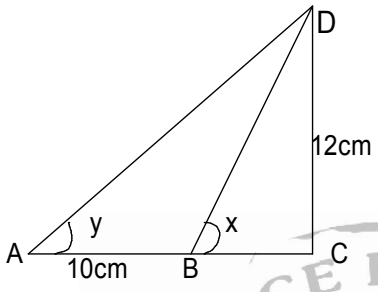


[a] 1 [b] 3 [c] 2
[d] 4 [e] 5

63. A 20 m deep well with dia meter 7m is dug and the earth from digging is evenly spread out to form a plat form 22 m by 14m. . Then height of the (plat form) is (Take $\pi = \frac{22}{7}$)

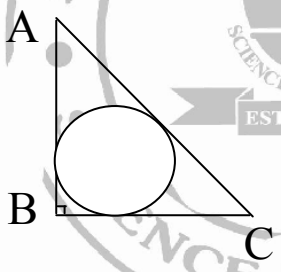
[a] 2.5 m [b]2 m [c] 3 m
[d]1.5 m [e] 4 m

64. $\angle C = 90$, AB = 10cm , CD = 12cm x + y = 90 , what is the length of BC ?



[a] 8 [b] 12 [c] 6
[d] 10 [e] 14

65. The sides of the right triangle is 6,8 10 centemeters . What is its inradius



[a] 2 cm [b] 4cm [c] 5cm
[d] 3cm [e] 7cm

66. What is 1 + 3 + 6 + 10 + ...+ 55 =

[a] 230 [b] 440 [c] 330
[d] 560 [e] 220

SPACE FOR ROUGH WORK

67.

1
2 6
3 9 15
4 12 20 28
5 15 25 35 45
6 18 30 42 54 66
.....
.....

Find the sum of the terms of 10^{th} row

[a] 956 [b] 1000 [c] 990
[d] 2000 [e] 1200

68. If the sides of a cyclic quadilateral is 5,4,6,7 centemeters. Find the area of this quadrilateral ?

[a] $\sqrt{840}$ [b] 840 [c] 210
[d] 420 [e] $\sqrt{210}$

69. Find the volume of largest cone that can be carved out from the solid sphere of radius 3 cm

[a] 32π cm^3 [b] $\frac{81}{4}\pi cm^3$ [c] 9π cm^3

[d] $\frac{81}{8}\pi cm^3$ [e] 27π cm^3

70. In a maths examination , the average for the entire class was 80 marks. If 10 % of the students scored 95 marks and 20% scored 90 marks. What was the average marks of the remaining students of the class.

[a] 85 [b] 80 [c] 70
[d] 75 [e] 65

SPACE FOR ROUGH WORK

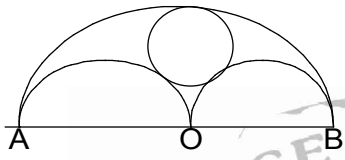
71. If three metallic spheres of radii 6cm, 8 cm , and 10cm are melted to form a single sphere, the radius of the new sphere will be.....

[a] 14 cm [b] 12 cm [c] 18 cm
[d] 16 cm [e] 15 cm

72. The sum of first $(n-1)$ terms of an arithmetic sequence is $5n^2-6n+1$., then its algebric form [n^{th} term] is

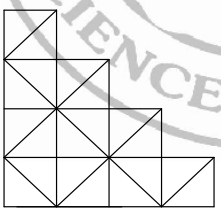
[a] $10n-1$ [b] $10n-6$ [c] $10n-12$
[d] $5n-6$ [e] $5n^2+4n$

73. O is the centre of large semicircle and other two semicircle are also drawn.Where diameter is the radius of big semicircle. If. AB = 18cm . Find the radius of the small circle ?



[a] 9cm [b] 4.5cm [c] 3 cm
[d] 8 cm [e] 6 cm

74. How many squares are there in the figure.?



[a] 9 [b] 8 [c] 10
[d] 12 [e] 14

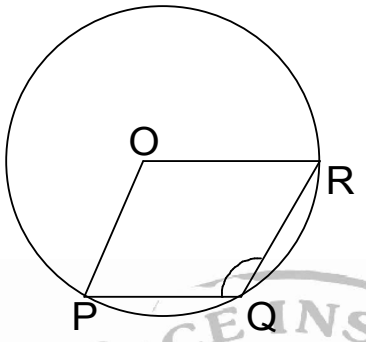
SPACE FOR ROUGH WORK

75. If $3\sin A = 4\cos A.$, then find tan A

[a] 3 [b] $\frac{4}{3}$ [c] 4

[d] $\frac{3}{4}$ [e] 1

76. In the figure, O is the centre of the circle and OPQR is a rhombus , then $\angle PQR$



[a] 60 [b] 120 [c] 90
[d] 180 [e] 100

77. The quadrilateral has two diagonals, pentagon has 5 diagonals. Find the maximum number of diagonals of decagon?

[a] 10 [b] 35 [c] 20
[d] 25 [e] 30

78. If $p(x) = x^2 - 10x + 25$ and P(a) = P(b) then a + b = ...

[a] 10 [b] 1 [c] 5
[d] 0 [e] 25

SPACE FOR ROUGH WORK

79. $50^2 - 49^2 + 48^2 - 47^2 + ... + 2^2 - 1^2 = ...$

[a] 1 [b] 2500 [c] 1000
[d] 0 [e] 1275

80. For an arithemetic sequence sum of first 4 terms is equal to 44 and its third term is 14 what is its first term?

[a] 8 [b] 4 [c] 6
[d] 2 [e] 1

SPACE FOR ROUGH WORK