

Roll No.....

**MATHEMATICS (REGULAR) (PART - I)**

**SAMPLE QUESTION PAPER FOR HSC EXAMINATION, 2014**

Time : 60 minutes

Total Marks - 50

**INSTRUCTIONS :**

1. **50 multiple choice questions (MCQ) are given in part (A). All the questions are compulsory. Each question carries 1 mark.**
2. **For each question select the correct alternative from four given alternatives to answer the question and darken the circle O as ● by ball pen (Blue / Black) against the alphabet corresponding to that alternative in the given OMR sheet.**

1.  $2x+3y = 7$  এবং  $3x + 2y = 3$  এহ সমাকরণদ্বয়ৰ সমাধানৰ  $x - y$  কেতে ?

[Space for rough work]

From the solutions of simultaneous equations  $2x+3y = 7$  and  $3x + 2y = 3$ , what is the value of  $x - y$  ?

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

2.  $x + y - 1 = 0$  এবং  $2x + 2y = 2$  এহ সমাকরণ দ্বয়ৰ সমাধান ষেট, নিম্নোক্ত  
মধুরু কেছি ?

Which is the solution set of the simultaneous equations  $x+y-1 = 0$  and  $2x+2y = 2$  from the following ?

- (A)  $\{(1,0)\}$  (B)  $\{(0,1)\}$  (C) শূন্যষেট (Empty set) (D) অসীমষেট (Infinite set)

3.  $x$  ও  $y$  যথাকৃমে গোটিৰ দুল অঙ্ক বিশিষ্ট সংখ্যাৰ একক এবং দশক স্থানীয় অঙ্ক।  
যদি সংখ্যাটি অঙ্কদ্বয়ৰ সমষ্টিৰ 3 গুণ হোଇথাএ, তেবে .....

The unit's and ten's place digit of a two digit number is  $x$  and  $y$  respectively. If the number is three times the sum of the digits of the number then .....

- (A)  $x + 10y = 3x$                     (B)  $10x + y = 3(x+y)$   
(C)  $10y + x = 3(x+y)$                     (D)  $3(10y + x) = x + y$

4. 'k'ৰ কেছি মান পাই  $3x + ky - 9 = 0$  এবং  $x + 2y - 3 = 0$  এহ-সমাকরণদ্বয়ৰ  
সংগত এবং নির্ভৰশীল হোবে ?

For which value of 'k' the simultaneous equations  $3x + ky - 9 = 0$  and  $x + 2y - 3 = 0$  are consistent and independent ?

- (A) -2                    (B) 2                    (C) 6                    (D) -6

5.  $x^2 + ax - 8 = 0$  ଦ୍ୱାରା ସମୀକରଣର ଗୋଟିଏ ବୀଜ ‘4’ ହେଲେ, ‘a’ ର ମାନ କେତେ ? [Space for rough work]  
If ‘4’ is a root of the quadratic equation  $x^2 + ax - 8 = 0$ , then the value of ‘a’ ..... |
- (A) 2              (B) 4              (C) -2              (D) -4
6.  $5x^2 - 6x + 1 = 0$  ଦ୍ୱାରା ସମୀକରଣର ବୀଜଦ୍ୱୟର ସ୍ଵରୂପ କ’ଣ ?  
(A) ବୀଜଦ୍ୱୟ ବାନ୍ଧବ ଏବଂ ସମାନ              (B) ବୀଜଦ୍ୱୟ ବାନ୍ଧବ ଓ ଅସମାନ  
(C) ବୀଜଦ୍ୱୟ ଅବାନ୍ଧବ              (D) ଏଥମଧ୍ୟରୁ କୌଣସିଟି ନୁହଁଁ |  
What is the nature of the roots of the quadratic equation  $5x^2 - 6x + 1 = 0$ ?  
(A) roots are real and equal              (B) roots are real and unequal  
(C) roots are not real              (D) None of the above.
7.  $3x^2 - x - 2 = 0$  ସମୀକରଣର ବୀଜଦ୍ୱୟ  $\alpha$  ଓ  $\beta$  ହେଲେ  $\alpha^{-1} + \beta^{-1}$  ର ମାନ ..... |  
If  $\alpha$  and  $\beta$  are the roots of the quadratic equation  $3x^2 - x - 2 = 0$  then the value of  $\alpha^{-1} + \beta^{-1}$  ..... |  
(A) 1              (B)  $\frac{1}{2}$               (C)  $-\frac{1}{2}$               (D) -1
8. ‘k’ ର କେଉଁ ମାନ ପାଇଁ  $kx^2 - 4x - 4 = 0$  ର ପ୍ରତ୍ୟେକିକାନ୍ତିକ ପରିପରା ହେବ ?  
For which value of ‘k’ the discriminant of  $kx^2 - 4x - 4 = 0$  is 64 ?  
(A) 1              (B) -3              (C) 3              (D) 5
9. ଯଦି  $2k + 1, 13$  ଓ  $5k - 3$  ଏକ A.P. ର କ୍ରମିକ ପଦ ହୁଅନ୍ତି, ତେବେ  $k =$  ..... |  
If  $2k + 1, 13$  and  $5k - 3$  are three consecutive terms of an A.P. then  
 $k =$  ..... |  
(A) 17              (B) 13              (C) 4              (D) 9
10. ଯଦି  $3, 5, 7, 9, \dots$  A.P. ର  $n$  ସଂଖ୍ୟକ ପଦର ଯୋଗପରିମା ହୁଏ ତେବେ  
 $n =$  ..... |  
If  $S_n$  of an A.P.  $3, 5, 7, 9, \dots$  is 288 then  $n =$  ..... |  
(A) 16              (B) 15              (C) 12              (D) 17
11.  $8, 11, 14, 17, \dots$  A.P. ର କେଉଁ ପଦଟି 272 ?  
Which term of the A.P.  $8, 11, 14, 17, \dots$  is 272 ?  
(A) 72              (B) 73              (C) 70              (D) 89

12. ଯଦି ଗୋଟିଏ A.P. ର  $S_n = 2n^2 + 3n$  ହୁଏ ତେବେ A.P. ର ସାଧାରଣ ଅନ୍ତର ..... | [Space for rough work]  
If  $S_n$  of an A.P. is  $2n^2 + 3n$  then the common difference of the A.P. is ..... |  
(A) 13      (B) 4      (C) 9      (D) -2
13. ‘A’ ଏକ ଘଟଣା ପାଇଁ  $P(A) : P(\bar{A}) = 3:4$  ହେଲେ  $P(A) = \dots$  |  
If ‘A’ is an event and  $P(A) : P(\bar{A}) = 3:4$  then  $P(A) = \dots$  |  
(A)  $\frac{1}{3}$       (B)  $\frac{3}{7}$       (C)  $\frac{3}{4}$       (D)  $\frac{4}{7}$
14. k ଏକ ଘଟଣା ହେଲେ, k ର ସମ୍ଭାବ୍ୟତା  $P(k) = \dots$  |  
The probability of the event k is ..... |  
(A)  $0 \geq P(k) \geq 1$       (B)  $0 \leq P(k) \leq 1$   
(C)  $0 > P(k) > 1$       (D)  $0 < P(k) < 1$
15. ଗୋଟିଏ ଅପ୍ରବଣ ମୁଦ୍ରାକୁ ତିନିଥର ଟସ୍ କଲେ ସମ୍ଭାବ୍ୟ ଫଳାଫଳ ସଂଖ୍ୟା ..... |  
An unbiased coin is tossed thrice. Then the number of total outcomes is ..... |  
(A) 2      (B) 4      (C) 6      (D) 8
16. ଦୁଇଟି ଲୁଡ୍‌ଗୋଟିକୁ ଗୋଟିକ ପରେ ଗୋଟିଏ ଗଡ଼ାଇଲେ ଦୁଇ ଲୁଡ୍‌ଗୋଟିରେ ମୌଳିକ ସଂଖ୍ୟା ଆସିବାର ସମ୍ଭାବ୍ୟତା ..... |  
Two balanced dice are rolled simultaneously. Then the probability that the numbers coming on both the dice are prime is ..... |  
(A)  $\frac{2}{9}$       (B)  $\frac{1}{4}$       (C)  $\frac{1}{3}$       (D)  $\frac{1}{6}$
17. ଦଶଗୋଟି ଲବ୍ଧାଙ୍କର ମାଧ୍ୟମାନ 15.7 | ଯଦି 19 ଲବ୍ଧାଙ୍କକୁ ଦଉ ତଥ୍ୟାବଳୀ ସହ ସାମିଲ କରାଯାଏ ତେବେ ନୃତନ ମାଧ୍ୟମାନ ..... |  
The mean of 10 observations is 15.7. If a new observation 19 is included, then new mean is ..... |  
(A) 17.6      (B) 16      (C) 13.8      (D) 34.7
18. ଗୋଟିଏ ତଥ୍ୟାବଳୀର ମାଧ୍ୟମାନ = ଗରିଷ୍ଠକ - 3 ଏବଂ ମଧ୍ୟମା = 22 ହେଲେ,  
ମାଧ୍ୟମାନ = ..... |  
If mean = mode - 3 and median = 22 of given data then mean = ..... |  
(A) 19      (B) 21      (C) 24      (D) 23

19. ગોટિએ બારમારતા બિચરણ સારણીને ચરૂર્થ સમાગર રાશિકૃત બારમારતા 25 એવું ચરૂર્થ સંભાગર બારમારતા 10 હેલે, તુટીએ સંભાગર રાશિકૃત બારમારતા ..... | [Space for rough work]
- For a given frequency distribution, the cumulative frequency of the fourth class is 25 and the frequency of the fourth class is 10. Then the cumulative frequency of the third class is .....|
- (A) 32            (B) 22            (C) 20            (D) 15
20. ગોટિએ બારમારતા બિચરણ સારણીનું મિલિથ્બા ઠથ્ય અનુયાયી  $\sum f_i d_i = -50$ ,  $\sum f_i = 200$  એવું આરમ્ભ બિન્ડુ  $A = 62.5$ . હેલે ઠથ્યાબળીન માધ્યમાન ..... |
- For a given frequency distribution  $\sum f_i d_i = -50$ ,  $\sum f_i = 200$  and assumed mean  $A = 62.5$ . Then the mean of the frequency distribution is .....|
- (A) 62.25            (B) 64.45            (C) 61.2            (D) 61.5
21.  $\Delta ABC$  ર શાર્ષબિન્ડુત્ત્રયાં સ્થાનાં A (3,4), B(0,0) એવું C(6,0) હેલે મધ્યમ  $\overline{AD}$  ર દેખ્યું ..... |
- If the vertices of  $\Delta ABC$  are A (3,4), B(0,0), and C(6,0); then the length of median  $\overline{AD}$  is .....|
- (A) 6            (B) 5            (C) 4            (D) 3
22. A(3,-6) ઓ B(-2, -1) |  $\overline{AB}$  કુ 3 : 2 અનુપાતરે અન્તિમ કરૂથ્બા P બિન્ડુ સ્થાનાં ..... |
- The co-ordinates of point A and B are A(3,-6) and B(-2, -1). The co-ordinates of P dividing  $\overline{AB}$  in the ratio 3:2 is .....|
- (A) P(4,-5)            (B) P(2,-5)            (C) P(1,-4)            (D) P(0,-3)
23.  $\Delta ABC$  ર શાર્ષબિન્ડુત્ત્રયાં A(3,0), B(0,3) ઓ C(3,3) હેલે  $\Delta ABC$  ક્ષેત્રફળ ..... બર્ગ એકક |
- What is the Area of the triangle having vertices A(3,0), B(0,3) and C(3,3)..... in square unit ?
- (A) 9            (B) 4.5            (C) 6            (D) 3
24. ‘a’ ર કેઢું માન પાછું P(3,a) એવું Q(4,1) બિન્ડુ મધ્યરે દૂરતા  $\sqrt{10}$  એકક હેબ ?
- For what value of ‘a’, the distance between the points P(3,a) and Q(4,1) is  $\sqrt{10}$  unit ?
- (A) 4            (B) -3            (C) 2            (D) 0

- |     |  |                        |                |                |
|-----|--|------------------------|----------------|----------------|
| 25. | ABCD ଚତୁର୍ଭୁଜର ଶାର୍କବିନ୍ଦୁଗୁଡ଼ିକର ସ୍ଥାନାଙ୍କ A(0,0), B(2,0), C (2,2) ଏବଂ D(0,2) ହେଲେ ଚତୁର୍ଭୁଜଟି ଏକ .....  | [Space for rough work] |                |                |
|     | (A) ବର୍ଗଚିତ୍ର  | (B) ରମ୍ପ               |                |                |
|     | (C) ଆଯତଚିତ୍ର   | (D) ଟ୍ରେପ୍‌ରିଯମ୍       |                |                |
|     | If the vertices of ABCD quadrilateral are A(0,0), B(2,0), C (2,2) and D(0,2) then ABCD quadrilateral is a .....  |                        |                |                |
|     | (A) square   | (B) Rhombus            |                |                |
|     | (C) Rectangle  | (D) Trapezium          |                |                |
| 26. | $\triangle ABC$ ରେ $\angle A$ ର ସମଦିଖଣ୍ଡକ $\overline{BC}$ କୁ D ବିଦ୍ୟୁରେ ଛେଦ କରେ । $\triangle ABD$ ର କ୍ଷେତ୍ରଫଳ ଓ $\triangle ACD$ ର କ୍ଷେତ୍ରଫଳର ଅନୁପାତ .....      |                        |                |                |
|     | In $\triangle ABC$ the bisector of $\angle A$ intersects $\overline{BC}$ at D. Then the ratio of area of $\triangle ABD$ and area of $\triangle ACD$ is .....  |                        |                |                |
|     | (A) AB + AC : AB   | (B) AB : AC            |                |                |
|     | (C) AC : AB  | (D) AC + AB : AC       |                |                |
| 27. | $\triangle ABC$ ରେ $m\angle B = 90^\circ$ , $\overline{BD} \perp \overline{AC}$ . ଯଦି AD = 8 ସେ.ମି. ଓ CD = 10 ସେ.ମି. ହୁଏ, ତେବେ $\overline{AB}$ ର ଦୈର୍ଘ୍ୟ ..... |                        |                |                |
|     | In $\triangle ABC$ $m\angle B = 90^\circ$ , $\overline{BD} \perp \overline{AC}$ . If AD = 8 cm and CD = 10 cm then the length of $\overline{AB}$ = .....       |                        |                |                |
|     | (A) 14 cm.   | (B) 16 cm.             | (C) 12 cm.     | (D) 9 cm.      |
| 28. | ଗୋଟିଏ ବୃତ୍ତର ଏକ ଜ୍ୟା, ବୃତ୍ତର ବ୍ୟାସାର୍କ୍ଷର $\sqrt{2}$ ଗୁଣ ହେଲେ ବୃତ୍ତର ସଂପୃକ୍ତ ଷ୍ଟୁଡ଼ିଗ୍ରାମର ତିଗ୍ରୀ ପରିମାପ .....   |                        |                |                |
|     | If the length of chord of a circle is $\sqrt{2}$ times of its radius, then the degree measure of the minor arc is .....  |                        |                |                |
|     | (A) $30^\circ$   | (B) $45^\circ$         | (C) $60^\circ$ | (D) $90^\circ$ |
| 29. | 10 ସେ.ମି. ବ୍ୟାସାର୍କ୍ଷ ବିଶିଷ୍ଟ ଗୋଟିଏ ବୃତ୍ତରେ ଏକ ଜ୍ୟା ବୃତ୍ତର କେନ୍ଦ୍ରରୁ 6 ସେ.ମି. ଦୂରରେ ଥିଲେ ଜ୍ୟାର ଦୈର୍ଘ୍ୟ.....  |                        |                |                |
|     | A chord is at a distance of 6 cm from the centre of a circle of radius 10 cm. Then the length of the chord is .....  |                        |                |                |
|     | (A) 4 cm.  | (B) 16 cm.             | (C) 8 cm.      | (D) 32 cm.     |

30. ଗୋଟିଏ ବୃତ୍ତର  $\widehat{AXB}$  ର ତିକ୍ରୀ ପରିମାପ  $140^\circ$  । A ଓ B ଠାରେ ଅଙ୍କିତ ସର୍ଗକ ଦ୍ୱାରା ଛେଦବିନ୍ଦୁ P ହେଲେ  $m\angle APB = \dots \dots \dots$  ।

[Space for rough work]

The degree measure of  $\widehat{AXB}$  is  $140^\circ$  in a circle. If the tangents drawn at A and B intersect at P then  $m\angle APB = \dots \dots \dots$  ।

- (A)  $40^\circ$       (B)  $50^\circ$       (C)  $20^\circ$       (D)  $30^\circ$

31. ଏକ ବୃତ୍ତରେ ପରିଲିଖିତ ଚତୁର୍ଭୁଜର ଦୂର ବିପରୀତ ବାହୁର ଦେଖ୍ୟର ସମନ୍ତି 12 ସେ.ମି. ହେଲେ ଚତୁର୍ଭୁଜର ପରିସୀମା ..... ।

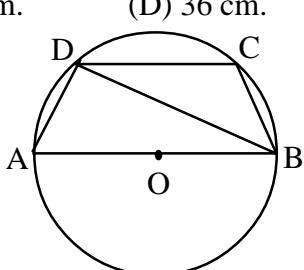
The sum of the lengths of the two opposite sides of circumscribing quadrilateral of a circle is 12 cm. Then the perimeter of the quadrilateral is ..... ।

- (A) 48 cm.      (B) 24 cm.      (C) 12 cm.      (D) 36 cm.

32. ପାର୍ଶ୍ଵ ଚିତ୍ରରେ  $\overline{AB}$  ବ୍ୟାସ ଏବଂ O ବୃତ୍ତର କେନ୍ଦ୍ର ।

ଯଦି  $m\angle ADC = 118^\circ$  ହୁଏ

ତେବେ,  $m\angle BDC = \dots \dots \dots$  ।



In the given figure 'O' is the centre of the circle and  $\overline{AB}$  is the diameter. If  $m\angle ADC = 118^\circ$  then  $m\angle BDC = \dots \dots \dots$  ।

- (A)  $38^\circ$       (B)  $56^\circ$       (C)  $28^\circ$       (D)  $18^\circ$

33. 'r' ସେ.ମି. ବ୍ୟାସାର୍ଦ୍ଧ ବିଶିଷ୍ଟ ଏକ ବୃତ୍ତରେ ଅନ୍ତଳିଖିତ ସମବାହୁ ତ୍ରିଭୁଜର ବାହୁର ଦେଖ୍ୟ କେତେ ?

The length of the side of an equilateral triangle inscribed in a circle of radius r is ..... ।

- (A)  $r$  cm.      (B)  $\sqrt{2}r$  cm.      (C)  $2r$  cm.      (D)  $\sqrt{3}r$  cm.

34. 3 ସେ.ମି. ବ୍ୟାସାର୍ଦ୍ଧ ବୃତ୍ତ ପ୍ରତି ବହିଷ୍ମ୍ବ P ବିନ୍ଦୁରୁ ବୃତ୍ତ ପ୍ରତି ଅଙ୍କିତ ସର୍ଗକ ଖଣ୍ଡ ଦ୍ୱାରା  $\overline{PA}$  ଏବଂ  $\overline{PB}$  ।  $m\angle APB = 60^\circ$  ହେଲେ  $\overline{PA}$  ର ଦେଖ୍ୟ ..... ।

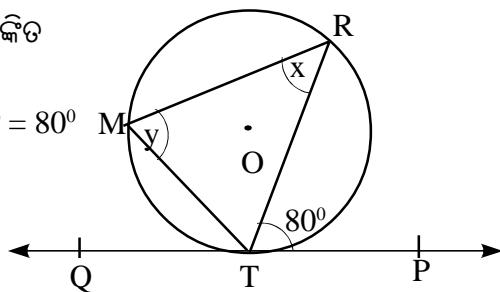
$\overline{PA}$  and  $\overline{PB}$  are the two tangent segments drawn from an external point 'P' to a circle of radius 3 cm. If  $m\angle APB = 60^\circ$  then the length of  $\overline{PA}$  is ..... ।

- (A) 3 cm.      (B)  $3\sqrt{3}$  cm.      (C)  $12\sqrt{3}$  cm.      (D) 2 cm.

35. ପାର୍ଶ୍ଵ ଚିତ୍ରରେ ବୃତ୍ତ ପ୍ରତି T ବିନ୍ଦୁରେ ଅଙ୍କିତ

ସର୍ଗକ  $\overset{\leftrightarrow}{PQ}$  |  $y = 2x$  ଏବଂ  $m\angle RTP = 80^\circ$

ହେଲେ,  $m\angle MTR = \dots\dots\dots$  |



[Space for rough work]

In the given figure  $\overset{\leftrightarrow}{PQ}$  is a tangent to the circle at T. If  $y = 2x$  and  $m\angle RTP = 80^\circ$  then  $m\angle MTR = \dots\dots\dots$  |

- (A)  $60^\circ$       (B)  $80^\circ$       (C)  $20^\circ$       (D)  $40^\circ$

36. ଦୁଇଟି ପରିଷରଛେଦୀ ବୃତ୍ତ ପ୍ରତି ସର୍ବଧୂଳି ଅଙ୍କିତ ସର୍ଗକ ସଂଖ୍ୟା କେତେ ?

The number of tangents can be drawn to two intersecting circles at most is ..... |

- (A) 1      (B) 2      (C) 3      (D) ଏଥରୁ କୌଣସିଟି ନୁହେଁ (None of these)

37.  $\Delta ABC \sim \Delta DEF$  ଏବଂ  $EF = \frac{1}{3} BC$  ହେଲେ,

$\Delta ABC$  ର କ୍ଷେତ୍ରଫଳ :  $\Delta DEF$  ର କ୍ଷେତ୍ରଫଳ = ..... |

If  $\Delta ABC \sim \Delta DEF$  and  $EF = \frac{1}{3} BC$ , then

Area of  $\Delta ABC$  : Area of  $\Delta DEF$  = ..... |

- (A) 1:9      (B) 1:3      (C) 9:1      (D) 3:1

38. ପାର୍ଶ୍ଵ ଚିତ୍ରରେ  $m\angle PQR = m\angle PRS$  |

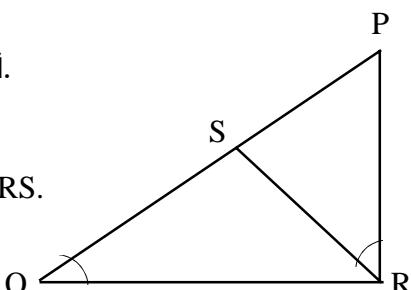
ଯଦି  $PR = 8$  ସେ.ମି. ଏବଂ  $PS = 4$  ସେ.ମି.

ତେବେ  $PQ = \dots\dots\dots$  |

In the given figure  $m\angle PQR = m\angle PRS$ .

If  $PR = 8$  cm and  $PS = 4$  cm

then  $PQ = \dots\dots\dots$  |



- (A) 12 cm.      (B) 16 cm.

- (C) 32 cm.      (D) 24 cm.

[Space for rough work]

39. ଗୋଟିଏ କୋନର ଭୂମିର ବ୍ୟାସାର୍ଦ୍ଦ ଏବଂ ବକ୍ର ଉଚ୍ଚତା ଯଥାକ୍ରମେ  $\frac{r}{2}$  ସେ.ମି. ଏବଂ  $\ell$  ସେ.ମି.  
ହେଲେ, ଏହାର ସମ୍ପୂର୍ଣ୍ଣ ପୃଷ୍ଠାଫଳ କେତେ ବର୍ଗ ସେ.ମି. ?

If the radius of the base and slant height of a cone is  $\frac{r}{2}$  cm and  $\ell$  cm respectively, then the total surface area of the cone in square cm. is ..... |

- (A)  $2\pi r\ell$       (B)  $\pi r(\ell+r)$       (C)  $\pi r\left(\frac{\ell}{2} + \frac{r}{4}\right)$       (D)  $2\pi r(\ell + r)$

40. ଦୁଇଟି ଗୋଲକର ଆୟତନର ଅନୁପାତ  $64:27$  ହେଲେ, ସେମାନଙ୍କର ବ୍ୟାସର ଅନୁପାତ  
..... |

If the ratio of the volumes of two spheres is  $64:27$  then the ratio of their diameters is ..... |

- (A) 16:9      (B) 8 : 3      (C) 10 : 7      (D) 4 : 3

41. ଯଦି ଗୋଟିଏ ବୃତ୍ତରେ ଏକ ଚାପର ତିଗ୍ରୀ ପରିମାପ  $90^\circ$  ହୁଏ, ତେବେ ଚାପ ଏବଂ ବୃତ୍ତର  
ପରିଧିର ଅନୁପାତ ..... |

If the degree measure of an arc of a circle is  $90^\circ$ , then the ratio of the arc to its circumference is ..... |

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

42. ଗୋଟିଏ ତ୍ରିଭୁଜାକୃତି ଭୂମି ବିଶିଷ୍ଟ ପ୍ରିଜିମର ଭୂମିର କ୍ଷେତ୍ରଫଳ 30 ବର୍ଗ ସେ.ମି. ଏବଂ ଆୟତନ  
150 ଘନ ସେ.ମି ହେଲେ ପ୍ରିଜମର ଉଚ୍ଚତା ..... |

The triangular base area of a prism is  $30\text{cm}^2$ . If the volume of the prism is  $150\text{ cm}^3$ , then its height is ..... |

- (A) 10 cm      (B) 15 cm      (C) 5 cm      (D) 20 cm

43. ଗୋଟିଏ ବୃତ୍ତକଳାର କ୍ଷେତ୍ରଫଳ, ସଂପୂର୍ଣ୍ଣ ବୃତ୍ତର କ୍ଷେତ୍ରଫଳର  $\frac{5}{18}$  ଅଂଶ ହେଲେ ବୃତ୍ତକଳାର  
ଚାପର ତିଗ୍ରୀ ପରିମାପ ..... |

If the area of a sector of a circle is  $\frac{5}{18}$  parts of the area of the circle then,  
the degree measure of the arc of the sector is ..... |

- (A)  $120^\circ$       (B)  $90^\circ$       (C)  $60^\circ$       (D)  $100^\circ$

44. ഗോടിംഗോലകര പൃഷ്ഠാളര ക്ഷേത്രപ്രകാരം 154 ബ.സേ.മി. ഹേഠെ ഏഹാര ബധാസ്വർജ്ജ സേ.മി.രെ [Space for rough work]  
..... |  $(\pi \approx \frac{22}{7})$
- If the surface area of a sphere is  $154 \text{ cm}^2$  then, the radius of the sphere  
..... cm |  $(\pi \approx \frac{22}{7})$
- (A) 15      (B) 7.5      (C) 7      (D) 3.5
45. ഗോടിംഗീലിശ്ചരാകൃതി ശ്രൂഢാ പൃഷ്ഠാളര ക്ഷേത്രപ്രകാരം 264 ബ.മി. എബം ആയുദന 924 ഘ.മി. ഹേഠെ, ശ്രൂഢാ ഭൂമിര ബധാസ്വ .....|
- The curved surface area of a cylindrical pillar is  $264 \text{ m}^2$ . If the volume of the pillar is  $924 \text{ m}^3$  then, diameter of the base is .....|
- (A) 14 m.      (B) 7 m.      (C) 21 m.      (D) 10.5 m.
46.  $(1+\tan 15^\circ)(1+\tan 30^\circ)$  ര മാന .....|
- The value of  $(1+\tan 15^\circ)(1+\tan 30^\circ)$  is .....|
- (A) 1      (B) 0      (C) -1      (D) 2
47.  $\cos(48^\circ + \theta) . \cos(12^\circ - \theta) - \sin 48^\circ + \theta) . \sin(12^\circ - \theta)$  ര മാന .....|
- The value of  $\cos(48^\circ + \theta) . \cos(12^\circ - \theta) - \sin 48^\circ + \theta) . \sin(12^\circ - \theta)$  is .....|
- (A)  $\frac{1}{2}$       (B)  $-\frac{1}{2}$       (C)  $\frac{\sqrt{3}}{2}$       (D)  $-\frac{\sqrt{3}}{2}$
48.  $\frac{\sin 162^\circ + \cos 153^\circ}{\cos 72^\circ - \cos 27^\circ}$  ര മാന .....|
- The value of  $\frac{\sin 162^\circ + \cos 153^\circ}{\cos 72^\circ - \cos 27^\circ}$  is .....|
- (A) 0      (B) 1      (C) -1      (D) ഏതുകൊണ്ടുമാറ്റി നുഹേം (None of these)
49.  $\operatorname{cosec}^2(97^\circ + \alpha) - \cot^2(83^\circ - \alpha)$  ര മാന .....|
- The value of  $\operatorname{cosec}^2(97^\circ + \alpha) - \cot^2(83^\circ - \alpha)$  is .....|
- (A) 0      (B) -1      (C) 2      (D) 1
50. ഗോടിംഗീലിക്കാര പാദദേശരു x മി. ദൂരരെ ഏക ബിന്ദുരു അഞ്ചിക്കാര ശാഖയ കോൺക ഉന്നതിര പരിമാണ  $30^\circ$  ഹേഠെ അഞ്ചിക്കാര ഉള്ളതാ .....|
- The angle of the elevation of the top of the tower from a point x m. away from the tower is  $30^\circ$ . Then the height of the tower is .....|
- (A) x m.      (B)  $\sqrt{3}x$  m.      (C)  $\frac{1}{\sqrt{3}}x$  m.      (D)  $\frac{1}{\sqrt{2}}x$  m.

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