



- 9)  $K = \frac{1}{2} mv^2$  DzÁUA ' v ' AÁÁ 'É-ÉAÁÁ  
 If  $K = \frac{1}{2} mv^2$  then the value of ' v ' is  
 A)  $\pm \sqrt{\frac{K}{2m}}$  B)  $\pm \sqrt{\frac{K}{\frac{1}{2} m}}$  C)  $\pm \sqrt{\frac{2m}{K}}$  D)  $\pm \sqrt{\frac{m}{2K}}$
- 10)  $ax^2 + bx + c = 0$  AÁÁ MAZÁÁ ±ÁÁZÁP aÁUAÖ , Á«ÁÁPÁgÁ t aÁZÁUA  
 If  $ax^2 + bx + c = 0$  is a pure quadratic equation, then \_\_\_\_\_  
 A)  $a = 0$  B)  $b = 0$  C)  $c = 0$  D)  $a + b + c = 0$
- 11) p & q UÁÁÁ  $2a^2 - 4a + 1 = 0$  AÁÁ aÁÁE@UÁÁÁZÁUA  $(p + q)^2 + 4pq$  ÉÁ 'É-É  
 If p & q are the roots of  $2a^2 - 4a + 1 = 0$  , then the value of  $(p + q)^2 + 4pq$  is  
 A) 2 B) 4 C) 6 D) 8
- 12)  $5x^2 + 13x + k = 0$  AÁÁ MAZÁÁ aÁÁE@ÁÁ EÉÉ/ÉBAZÁgÁ aÁÁVÁPÁPEÍ , Á aÁÁÉÁVZÁgÉ ' k ' AÁÁ 'É-É  
 If one root of  $5x^2 + 13x + k = 0$  is equal to the reciprocal of the other, then the value of ' k ' is  
 A) 0 B) -6 C) 5 D) 6
- 13) avÁZÁ° ÉÁ , A aÁÁ , ÁaÁÖPAUÁÁÁ  
 In the figure equal tangents are  
 A) AP & AE B) AD & AE  
 C) AC & AP D) AB & AE
- 
- 14) 1.4«ÁÁ JvÁgÁ«gÁÁ aÁÁ °ÁÁqÁAUÁÉÁ EÉgÁ½ÉÁ GzÁV1.2«ÁÁ EzÉ. CzÉÁ , Á aÁÁÁÁZÁ° eMOZÁÁ PAÍ ÁÁZÁ EÉgÁÁÁ 5.4 «ÁÁ GzÁkzÁgÉ D PAÍ ÁÁZÁ JvÁgÁ aÁÁ  
 If the shadow of a boy with height 1.4 m is 1.2m then the height of a building which cast a shadow of 5.4 m at the same time is  
 A) 6.1 m B) 6.3 m C) 7 m D) 6 m
- 15) 6 ÉÁ.«ÁÁ, 8 ÉÁ.«ÁÁ, 10 ÉÁ.«ÁÁ aÁÁ aÁÁÁÁ A, B & C PÉÁAZÁ«gÁÁ aÁÁEgÁÁ aÁÁVÁUÁÁÁ ÁÁgÁ , ÁgÁ 'Á°ÁÁÁV ÁÁÖ , ÁÁVÁÁÉ. °ÁUÁZÁgÉ ΔABC AÁÁ ÁÁVÁUÁVÉ  
 If three circles of diameter 6cm, 8cm & 10 cm with centres A, B & C touch externally. Then the perimeter of the Δ ABC obtained by joining these points is  
 A) 12cm B) 24cm C) 36cm D) 48cm
- 16) MAZÁÁ aÁÁVÁZÁ aÁÁ ÁÁÁ , Á aÁÁVÁUÁÁ aÁÁVÁUÁÁÁ , ÁUÁÁ ÉÁqÁÁÉ 1 Á«ÁVÁÁZÁ PÉÁVÁÁÁ  
 The space between Diameter and arc of a circle is  
 A) aÁÁVÁUÁÁÁ B) ÁÁÁ aÁÁVÁUÁÁÁ C) CÁÁÁ aÁÁVÁUÁÁÁ D) CzÁÖ aÁÁVÁUÁÁÁ  
 A) Segment B) Minorsegment C) Major segment D) Semi segment
- 17) MAZÁÁ , ÁÁÁ ÁÁÁÁVÁÁÁ L , i QÁÁÁ PAÍ , ÉÁ JvÁgÁ 4 ಸಂ.ಮೀ . ಇದರ ಬದಲಗೆ ಬಳಸಬಹುದಾದ ಅಷ್ಟೇ ತ್ರಿಜ್ಯವಿರುವ  
 EÉÁgÁ ±ÁÁPÁÁ«ÉÁ JvÁgÁ aÁÁ



The sides of a quadrilateral ABCD are the tangents to a circle with centre O. If AB = 8cm and CD = 5cm then find AD + BC

- 28) write the formula to find the volume of a cone with radius 'h' and height ' r '
- 29) Expand and simplify :  $\Sigma x^2 + 2 \Sigma yz$
- 30)  $A = \begin{pmatrix} 3 & 4 \\ 5 & 6 \end{pmatrix}$  and  $B = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$  then find  $A + 2B$
- 31) Among 60 students 48 play throw ball and 27 play volley ball. If some of them play both, find the number of students who play only throw ball.
- 32) If  $U = \{ 0, 1, 2, 3, 4, 5, 6, 7, 8 \}$   $A = \{ \text{Multiples of 2} \}$   $B = \{ \text{factors of 6} \}$  Then find  $(A \cup B)^c$  and represent it in Venn diagram.
- 33) If the third term and seventh term of an AP are 18 & 30. Find the sum of 17 terms.
- 34) If the AM and GM of two numbers are 5 and 4. Find the numbers
- 35)  $\begin{pmatrix} 1 & 2 \\ 2 & 5 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$  then find the value of x & y
- 36) With an example show that  ${}^n C_r = {}^n C_{n-r}$
- 37) Simplify :  $\sqrt{50} - \sqrt{98} + \sqrt{162}$
- 38) Rationalize the denominator and simplify:  $\frac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}}$



49) MOBILE ಪದದ ಅಕ್ಷರಗಳಿಂದ ಎಷ್ಟು ಪದಗಳನ್ನು ರಚಿಸಲು ಸಾಧ್ಯ? ಅವುಗಳಲ್ಲಿ ಎಷ್ಟು ಪದಗಳು  $\text{AgAPAgUA} \frac{1}{2} \text{AzA DgAA} \dots \text{AUeE} \frac{1}{2} \text{AAw} \text{A} \text{e} \text{?}$   
 How many words can be formed using the letters of the word MOBILE ? How many of them begins with vowels ?

50) F PEVAVEA AVOPAVEA YAAAPAUVA ANIAPPA «ZAEE PAQA» r-Aj .  
 Calculate the standard deviation of following data.

AAOAAvAgA (CI)	1 - 5	6 - 10	11 - 15	16 - 20
DAAEWJ ( f )	1	2	3	4

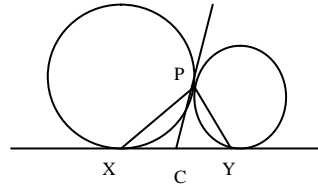
51) 2EEA WAvAZA JgAgAA OAEAEAQWAA AAA AC AA vAAU AC UA AA PA AA AV (a - 3) & (a<sup>3</sup> + a<sup>2</sup> - 17a + 15) DVAE. D JgAgAE WAvAZA OAEAEAQWAAEAA PAQA» r-Aj .  
 The HCF & LCM of two 2nd degree expressions are (a - 3) & (a<sup>3</sup> + a<sup>2</sup> - 17a + 15). Find the expressions.

52)  $x + \frac{1}{x} = \sqrt{3}$  DzAUA  $x^3 + \frac{1}{x^3}$  EE PAQA» r-Aj  
 If  $x + \frac{1}{x} = \sqrt{3}$  then find the value of  $x^3 + \frac{1}{x^3}$

53) MSAA AAOAA vAAgAA AA WAAAZA 8 Q. «AA GvAAPEI ZA 1 C AZA AA APOEI wgAAV 5 Q. «AA EAQZAA AA vAAEAA JqAPEI wgAAV 4 Q. «AA EAQZAA EAAvAgA YAAEA: JqAPEI 10 Q. «AA EAQZAG E CAAEA EAgAI  
 ಸ್ಥಳದಿಂದ ಕುರಿರುವ ಸ್ಥಳಕ್ಕೆ ಇರುವ ಕನಿಷ್ಠ ದೂರ ವೆಷ್ಟು?

A man walks 8km due north then 5 km East and turns left then walk 4km and finally turns left and walk 10km. How far is he from starting point ?

54) avAZA eXY & PC UA AA AEVAPEI JVEZA AAOPAUVA  
 $\angle XPY = 90^\circ$  JAZAA VEAAj  
 In the figure, XY & PC are tangents to the circle.  
 Prove that  $\angle XPY = 90^\circ$



55) MAZAA UAAUEAAvAgA EE rAA AEZA AA EGA YAZUA AEVAPEI AEZA DgAA YAZUA AEVAPEI EGA CAAAVAV 125:152 DzAgE ANIAEA CAAAVAV PAQA » r.  
 If the ratio between first three terms and first six terms of GP is 125 : 152. Find the common ratio.

56) AAAGAE; wAAACUA «1 tOUAA CAUVA CAAAGAEYA A EEAAWUVA AUOUVA CAAAVAVAZA gAAvAE.  
 JOZAA ACi.  
 Provet that area of similar triangles are proportional to square of their corresponding altitudes.

57)  $x^2 + 2x - 3 = 0$  AAAPAgAtZA EAPe r / Draw the graph of :  $x^2 + 2x - 3 = 0$

58) PEAAZAAVA EAQA EA CAVAgA 7 EA. «AA OUAWE wAAUVA 4.5 EA. «AA AA vAAU 3.5 EA. «AA EGA AA JgAgAA AEVAUVAE EEAQA ANIAEA AAOPAUVAEAA JVE - Aj .  
 Draw two circles of radii 4.5cm and 3.5cm with their centres 7cm apart. Construct DCT.

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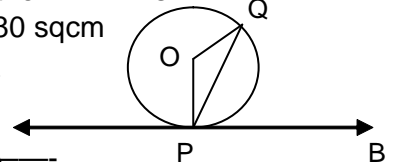
- 12)  $(3 \pm \sqrt{2})$  are roots of a quadratic equation. The equation is  
 Quadratic equation with roots  $(3 \pm \sqrt{2})$  is  
 A)  $x^2 + 6x - 7 = 0$       B)  $x^2 - 6x + 7 = 0$       C)  $x^2 + 6x - 7 = 0$       D)  $x^2 - 6x - 7 = 0$

- 13) ಒಂದು ನಿರ್ದಿಷ್ಟ ವರ್ಗ ಸಮೀಕರಣದ ಪರಿವಲಯ ಮತ್ತು ಸರಳರೇಖೆಯ ನಕ್ಷೆಯಲ್ಲಿ ಸರಳರೇಖೆಯು  $(-3,9)$  ಮತ್ತು  $(1,1)$  ಅಂಶಗಳಲ್ಲಿ ಪಾರಾಬೋಲನನ್ನು ಛೇದಿಸುತ್ತದೆ. ಈ ಸಂದರ್ಭದಲ್ಲಿ ಸರಳರೇಖೆಯ ಸಮೀಕರಣವು  
 In a graph, straight line intersects the parabola at  $(-3,9)$  &  $(1,1)$ . Then the equation is  
 A)  $x^2 - 2x + 3 = 0$       B)  $x^2 + 2x - 3 = 0$       C)  $x^2 - 3x + 2 = 0$       D)  $x^2 - 2x - 3 = 0$

- 14) AB ಮತ್ತು CD ಒಂದು ವೃತ್ತದ ಎರಡು ಸಮಾನಾಂತರ ಚರ್ಮಗಳು. ಚರ್ಮ AB ನಿಂದ ಕೇಂದ್ರಕ್ಕೆ ದೂರ 3.5 ಸೆ.ಮೀ. ಆಗಿದ್ದರೆ, AB ಮತ್ತು CD ನಡುವಿನ ದೂರವು  
 AB & CD are two equal chords in a circle. If the distance from chord AB to the centre is 3.5 cm, then distance between AB & CD is  
 A) 7cm      B) 3.5cm      C) 4.5cm      D) 7.5cm

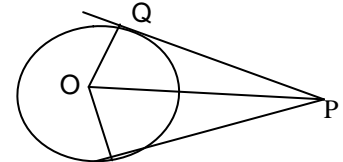
- 15)  $\Delta ABC \sim \Delta DEF$ .  $BC = 2.5$  ಮತ್ತು  $\Delta ABC$  ನ ವಿಸ್ತೀರ್ಣ 120 ಚ.ಸೆ.ಮೀ. ಆಗಿದ್ದರೆ  $\Delta DEF$  ನ ವಿಸ್ತೀರ್ಣವು  
 $\Delta ABC \sim \Delta DEF$ ; If  $BC = 2.5$  and area of  $\Delta ABC = 120$  sq cm then  $\Delta DEF$  is  
 A) 240 sqcm      B) 120 sqcm      C) 840 sqcm      D) 480 sqcm

- 16) O ಒಂದು ವೃತ್ತದ ಕೇಂದ್ರ. APB ಒಂದು ಸ್ಪರ್ಶಕ ರೇಖೆ.  $\angle QPB = 60^\circ$  ಆಗಿದ್ದರೆ  $\angle PQO =$   
 O is the centre of a circle. APB is a tangent.  $\angle QPB = 60^\circ$  then  $\angle PQO =$   
 $\angle QPB = 60^\circ$  then  $\angle PQO =$



In the figure, APB is a tangent. If  $\angle QPB = 60^\circ$  then  $\angle PQO =$   
 A)  $60^\circ$       B)  $30^\circ$       C)  $90^\circ$       D)  $120^\circ$

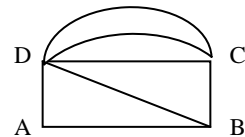
- 17) ಒಂದು ವೃತ್ತದಿಂದ ಎರಡು ಸ್ಪರ್ಶಕ ರೇಖೆಗಳು PQ ಮತ್ತು PR ಎಳೆಯಲಾಗಿದೆ.  $\angle QPR = 50^\circ$  ಆಗಿದ್ದರೆ  $\angle QOP$  ನ ಅಳತೆ  
 In the adjoining figure, PQ & PR are tangents.  $\angle QPR = 50^\circ$  then  $\angle QOP$  is  
 If  $\angle QPR = 50^\circ$  then  $\angle QOP$  is  
 A)  $50^\circ$       B)  $65^\circ$       C)  $80^\circ$       D)  $130^\circ$



- 18) ಒಂದು ವೃತ್ತದ ತುದಿ ಮತ್ತು ಒಂದು ಸಿಲಿಂಡರ್‌ನ ತುದಿ ಸಮಾನವಾಗಿರಲು ಅವುಗಳ ಅಳತೆಗಳ ನಡುವಿನ ಸಂಬಂಧವು  
 Relation between a cone and a cylinder with same radius and height is  
 A) cone = cylinder      B) 3 cone = cylinder      C) cone = 3 cylinder      D) All the above

- 19) ಒಂದು ರೋಲರ್‌ನ ಲತರಲ್ ಸರ್ಫೇಸ್ ಅರಿಯು 5 ಚ.ಮೀ. ಆಗಿದೆ. 1000 ಚ.ಮೀ. ಒಂದು ಒಡಂಬಡಿಕೆಯನ್ನು ಪೂರೈಸಲು ಅದು ಎಷ್ಟು ಸುತ್ತುಗಳನ್ನು ತಿರುಗಿಸುತ್ತದೆ  
 The lateral surface area of a roller is 5sqm. Find the number of revolutions that it does to cover a field of 1000 sqm  
 A) 100      B) 200      C) 50      D) 500

- 20) ಒಂದು ಚೌಕದ ಒಂದು ಕೋನದಲ್ಲಿ ಒಂದು ವೃತ್ತವು ಇದೆ. ಈ ವೃತ್ತದ ಮೇಲಿನ ಅಂಶಗಳ ಸಂಖ್ಯೆ  
 In the figure, number of odd nodes is  
 A) 3      B) 2      C) 1      D) 0





II 21)  $a & r$  are the first term and common ratio then  $S_{\infty}$  is 1x10

If  $a$  &  $r$  are the first term and common ratio then  $S_{\infty}$  is

22) Find the AM between 2 & 8

23)  $M = \begin{pmatrix} 5 & 6 \\ -1 & 2 \end{pmatrix}$  find  $M - M^{-1}$

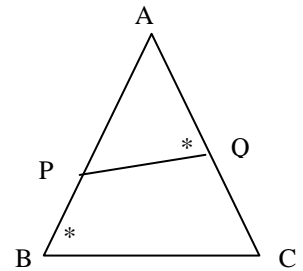
24) Write the formula to find the coefficient of Variation.

25)  $(6x - 12)$  &  $(6x^2 - 24)$  Find the LCM of  $(6x - 12)$  &  $(6x^2 - 24)$

26) Find the value of  $\sum m = 0$  if  $\sum m = 0$

27) Fill in the blank with suitable answer based on given figure.

$$\frac{AB}{AC} = \frac{AQ}{\square}$$



28) Calculate the breadth of a rectangle whose length and diagonal are 17cm and 15cm.

29) If two triangles are equiangular, then their corresponding sides are \_\_\_\_\_

30) Write the formula to find the lateral surface area of hemisphere.

III. 31)  $A = \{3, 4, 5, 6, 7\}$ ,  $B = \{4, 5, 6, 8\}$  &  $C = \{5, 6, 7, 8\}$  Draw the Venn diagram of  $A \cap (B \cup C)$ .

Given  $A = \{3, 4, 5, 6, 7\}$ ,  $B = \{4, 5, 6, 8\}$  &  $C = \{5, 6, 7, 8\}$

32) In a school day program 60% students participate in dance, 25% in drama and dance. Find the percentage of students who participate in drama only.

33) If  $T_3 = \frac{2}{17}$  &  $T_1 = \frac{2}{9}$  then find  $T_{10}$  of HP

34) 7 boxes are kept on a table. Kran put one marble in first box, 2 in II box, 4 in III box and so on. Find the total number of marble that are required to keep in boxes with same order.

35)  $A = \begin{pmatrix} 2 & 1 \\ 3 & 0 \end{pmatrix}$  then find  $A^2 + A$









23)  $A = \begin{pmatrix} 0 & 2x \\ 6+x & 0 \end{pmatrix}$  is a skew symmetric matrix, then the value of 'x' is \_\_\_\_\_  
 ಒಂದು ವಿಷಮ ಸಮಮಿತಿ ಮಾತೃಕೆಯಾದರೆ 'x' ನ ಮೌಲ್ಯವು \_\_\_\_\_

24) IF A is an assumed mean. The value of actual mean can be found out by the formula

A JEABAZA CAZAdAA gAJ AIAZhgE dAAZA gAJ AIAEAB PAQA»RAIAAaA ,KEVbe

25) HCF of :  $x^3 - 64$  and  $x^2 - 16$  is \_\_\_\_\_/

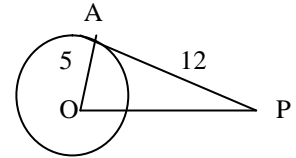
$(x^3 - 64)$  a AVAU  $(x^2 - 16)$  E a UMA aA . A.C. a AEA?

26) Using notation  $-x + y^2 - z + x^2 - x + z^2$  can be written as \_\_\_\_\_

$-x + y^2 - z + x^2 - x + z^2$  EAB ,APAVA GYAIIEAV<sup>1</sup> SgEZAUA --

27) In the figure AP tangent = 12cms, OA radius = 5cms, then the length of OP is \_\_\_\_\_

avLEP e AP , ADPA =12cms a AVAU wch OA= 5cms DzbgE OP EA CVAE --

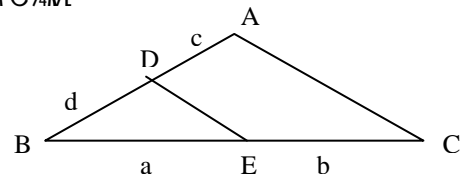


28) In the figure, AC || DE, then corollary of BPT

in terms of a,b,c & d is \_\_\_\_\_

a ME@ PIAEA AVMAIA GYMBAAIAZA YBaga

a,b,c a AVAU UMA EA EA ASAZA SgE-Aj .



29) Total surface area of a cylinder is \_\_\_\_\_

MAZA 1° Aqj EA YKETO a AA-aa «1tö PAQA»RAIAAaA ,KEVbe --

30) State converse of Pythagorean theorem/ YKAUFEAGa EA YBAIAIAZA «-EAaA YBAIAIA SgE

III. Answer the following / F PVAIEP UMEAB Gvj<sup>1</sup>.

31)  $A = \{ r, a, t \}$ ,  $B = \{ c, a, t \}$  find  $A \cap B$  through Venn diagram.

$A = \{ r, a, t \}$ ,  $B = \{ c, a, t \}$  DZAUAA  $A \cap B$  EAB a Ei avla a ME@PA VEAj<sup>1</sup>.

32) A florist has 110 champak flowers garlands. 50 off jasmine garlands and 30 of each. Find the total number of garlands with him.

MSa MEa ArUEA S½ 110 ,A ; UE MEa EAB OKEACgAA a AgUMaE 50 a A UE MEa EAB OKEACgAA a AgUMa a AVAU 30 JgqA SUIA OKEUMaEAB OKEACgAA a AgUMaE E a E AUAZhgE Ca ER gAA MI AO AgUMa ASi ಎಷ್ಟು ?

33)  $S_8 : S_4 = 97 : 81$  Find the common ratio. /  $S_8 : S_4 = 97 : 81$  DzbgE ,Aa AEA CEAVAVP EAB

PAQA»r-Aj .

34) In a HP, 4<sup>th</sup> term is  $\frac{1}{3}$  and 12<sup>th</sup> term is  $\frac{1}{27}$  Write the HP.

MAZA o gAVPA +BEAIA EA@EA YZA  $\frac{1}{3}$  a AVAU 12 EA YZA  $\frac{1}{27}$  DzbgE o gAVPA +BEAIAEAB SgE-Aj .

35) Solve for 'x' :  $\begin{pmatrix} x^2 & 3 \\ 4 & 5 \end{pmatrix} - 2 \begin{pmatrix} x & 1 \\ -1 & 0 \end{pmatrix} = \begin{pmatrix} 0 & 1 \\ 6 & 5 \end{pmatrix}$  'x' EA 'E' PAQA»r-Aj .

36) Write the meaning of  ${}^n P_r$  and write the formula. /  ${}^n P_r$  EzbgE ,KEVbe SgE

37) Find the product of  $\sqrt{3}$  and  $\sqrt[3]{2}$  /  $\sqrt{3}$  a AVAU  $\sqrt[3]{2}$  UAt®Sp PAQA»r-Aj .

38) Solve the equation using formula:  $x^2 - 7x + 12 = 0$

$x^2 - 7x + 12 = 0$  EAB ,KEVbe GYAIIEAV<sup>1</sup> ©r<sup>1</sup>.

39) Rationalize the denominator and simplify:  $\frac{2\sqrt{5}}{\sqrt{6+2}}$   
 bAZA CPgAt APj<sup>1</sup> , APa<sup>1</sup> :



