

MATHS

BOOKS - JEEVITH PUBLICATIONS MATHS (KANNADA ENGLISH)

ANNUAL EXAMINATION QUESTION PAPER -3

Section A

1. Define power set of a Set.



2. If G={7,8} and H={5,4,2}, find $G \times H$ and $H \times G$.

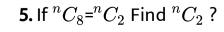


3. Convert 520° into radian measure ?



4. Express $(-5i)\left(\frac{1}{8}i\right)$ in the form a + ib .







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6. Write the 5^{th} terms of the sequences whose n^{th} term is $a_n=2^n$?



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7. Find the slope of the lines making inclination of 60° with the postive direction of x-axis ?



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8. Evaluate $\lim_{x\to 0}\left[\frac{\cos x}{\pi-x}\right]$?



9. Write the contrapostive, If a triangle is equilateral then it is isosceles?



10. If two coin are tossed once . Find a sample space ?



Section B

1. Given A = $\{2,3\}, B=\{x\!:\!x$ is solution of $x^2+5x+6=0\}$ find $A\cup B$?



2. Ilf A and B are two sets such that $A \cup B$ has 50 elements, A has 28 elements and B has 32 elements, how many elements does $A \cap B$ have?



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3. If (x+1,y-2) = (3,1) Find the values of x and y.



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4. Find the radius of the circle in which a central angle of 60° intercepts an arc of length 37.4 cm (use $\pi=\frac{22}{7}$)



5. Find the value of $\sin 75^{\circ}$.



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6. If $x+iy=rac{a+ib}{a-ib}$, prove that $x^2+y^2=1$



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7. Solve 5x+1>(-24), 5x-1<24 and represent the solution graphically on number line ?



8. Derive the formula to find the angle between two lines with slopes m_1 and m_2



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9. Find the equation of the line passing through the points(-1,1) and (2,-4)?



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10. Find the equation of the set of points which are equidistant from the points (1,2,3) and (3,2,-1)?



11. Evaluate
$$\lim_{x\to 0} \left(\frac{1-\cos x}{x}\right)$$
 ?



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- **12.** Construct the truth table of $p \wedge q$?
 - 0

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- 13. Write the mean of the given data: 6,7,10,12,13,4,8,12?
 - 0

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14. Given P(A) = $\frac{3}{5}$ and $P(B) = \frac{1}{5}$. Find P(A or B), if A &

B are mutually exclusive events.



Section C

1. In a survey it was found that 21 people liked porduct A, 26 liked product B and 29 liked product C. If 14 people liked product A and B, 12 people like products C and A, 14 people liked products B and C and 8 liked all the three products.

Find how many liked product C only.



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2. Let A= {1,2,3}, B={3,4} and C={4,5,6} find $(A\times B)\cap (A\times C)\ ?$

3. Two trees ,A and B are on the same side of a river . From a points C in the river the distance of the trees A and B is 250m and 300m respectively. If the angle C is 45° . Find the distance of the trees?



4. Express $1+i\sqrt{3}$ in polar form



6. In how many ways can 5 girls and 3 boys be selected in a row so that no two boys are together?



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7. Find the 13^{th} term in the expansion $\left(9x-\frac{1}{3\sqrt{x}}\right)^{18}:x\neq 0?$



8. Find the 20^{th} and n^{th} term of the G.P. $\frac{5}{2}$, $\frac{5}{4}$, $\frac{5}{8}$?



Find the 20^{th} term of the series 9.

$$2 imes 4+4 imes 6+6 imes 8+\ldotsn^{th}$$
 terms ?



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10. Find the coordinates of foci, the vertices length of major axes of the ellipse $rac{x^2}{25}+rac{y^2}{9}=1$?



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11. Find the derivative of (tanx) w.r.t x from first principal method?



12. Write the statement in three different ways conveying the same meaning "If a triangle is equiangular then it is an obtuse angled triangle "?



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13. A coin is tossed twice. What is the probability that atleast one tail occurs?



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14. Three are 4 men and 6 women in a city council. If one council member is selected for a committee at random how

likely is it that it is women?



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Section D

1. Draw the graph of the function $F(x)=x^2$ and write its domain and range ?



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2. Prove that $\cos^2 2x - \cos^2 6x = \sin 4x \cdot \sin 8x$?



3.

$$1^2+2^2+3^2+.....+n^2=rac{n(n+1)(2n+1)}{6}\,orall n\in N.$$



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4. Solve graphically $2x+y\geq 6, 3x+4y\leq 12$



5. In an examination , a question paper consists of 12 question divided into two parts, Part I and Part II containing 5 and 7 questions , respectively . A student is required to attempt 8 questions in all selecting atleast 3 from each part . In how many ways can a student select the questions ?



6. State and prove Bionomial theorem for any positive integer n.



7. Derive the section formula for the internal division in three dimensions.



8. Prove that $\lim_{x o 0} \frac{\sin x}{x} = 1$ (x being measured in radians)

9. Find the mean deviation about the mean for following data:

хi	5	7	9	10	12	15
Fi	8	6	2	2	2	6



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Section E

1. Prove Geometrically $\cos(x+y) = \cos x, \cos y - \sin x. \sin y$ and hence prove

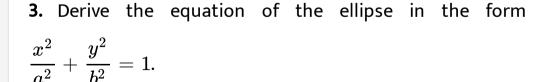
that $\cos(x-y) = \cos x \cos y + \sin x \sin y$ using unit circle concept?



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2. Find the sum of the n terms to the series

 $5^2 + 6^2 + 7^2 + \dots + 20^2$?





4. Find the derivative of $\frac{x + \cos x}{\tan x}$ with respect to x

