MATHS

BOOKS - JEEVITH PUBLICATIONS MATHS (KANNADA ENGLISH)

ANNUAL EXAMINATION QUESTION PAPER -4

Section A

1. Write the interval $(-3, 0)$ in set builder form ?

Watch Video Solution

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

Watch Video Solution

3. If $\cos x = \frac{-3}{5}$, x lies in 3^{rd} qudrant , Find the value of tan x ?

Watch Video Solution

4. Find the multiplicative inverse of 1+i.

Watch Video Solution

5. Find the value of $\frac{7!}{5!}$?

Watch Video Solution

6. Find the sixth term of the sequence $a_n = \frac{n}{n+1}$?

Watch Video Solution

7. Find the slope of the time passing through the points (3,-2) and (-1,4)

Watch Video Solution

8. Find the derivative of $x^2 - 2$ at x =10 ?

Watch Video Solution

9. Write the negation of statement $\sqrt{2}$ is not a complex number.

Watch Video Solution

10. Two coins (a one rupee coin and a two rupee coin)are tossed once. Write the sample space ?

Watch Video Solution

Section B

1. If $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$, $A = \{1, 2, 3, 4\}$ and $B = \{2, 4, 6, 8\}$ Find $(A \cup B)$?

Watch Video Solution

2. In a school , there are 20 teachers who teach Mathematics or physics .Of these , 12 teach Mathematics and 4 teach both

Physics andMathematics. How many teach Physics ?

Watch Video Solution

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

Watch Video Solution

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

Watch Video Solution

5. Find the value of $\sin 15^\circ$

Watch Video Solution

6. If $\left(\frac{1+i}{1-i}\right)^{2m} = 1$, then find the least integral value of m.

Watch Video Solution

7. Solve $5x - 3 > 3x - 5$ and show the graph of the solution on a number line.

Watch Video Solution

8. Find the distance of the point (3,-5) from the line $3x - 4y - 26 = 0$

Watch Video Solution

9. Find the equation of the line through the points (1,-1) and (3,5).

Watch Video Solution

10. Find the ratio in which the y-z plane divides the line segment formed by joining points (-2,4,7) and (3,-5,8)

Watch Video Solution

11. Evaluate $Lt_{x \to 0} \frac{\sqrt{1+x}-1}{x}$.

Watch Video Solution

12. Write the converse and contrapositive of the statement "If a triangle is eqalateral ,it is isosceless"?

Watch Video Solution

13. The coefficient of variation for a distribution is 60 and standard deviation is 21. Find the arithmetic mean.

Watch Video Solution

14. A card is selected from a pack of 52 cards.Find the probability that the card drawn is

(i) an ace

(ii) black card

Watch Video Solution

Section C

1. In a survey of 600 students in a school, 150 students were found to be taking tea and 225 taking coffee, 100 were taking both tea and coffee. Find how many students were taking neither tea nor coffee ?

Watch Video Solution

2. $\sin 2x + \cos x = 0$

Watch Video Solution

3. Prove that : $\sin 3x = 3\sin x - 4\sin^3 x$

Watch Video Solution

4. Find the polar form of the complex number $\sqrt{3}+i$

Watch Video Solution

5. Solve: $2x^2+x+1=0$

Watch Video Solution

6. Find 'n' if $\frac{{}^{n}P_4}{{}^{n-1}P_4}=\left(\frac{5}{3}\right)$?

Watch Video Solution

7. Find the co-efficient of x^5 in $(x+3)^8$?

Watch Video Solution

8. Insert three numbers between 1 and 256 so that the following sequence is a G.P ?

Watch Video Solution

9. Find the sum of all numbers between 200 and 400 which are divisible by 7?

Watch Video Solution

10. Find the co-ordinate of the focus ,equation of the directrix and length of the Latus Rectum of the Parabola $\left(y^2 = 8x\right)$?

Watch Video Solution

11. Differentiate of $\sin x$ w.r.t. x from first principles

Watch Video Solution

12. Verify by the method of contradiction that $\sqrt{7}$ is irrational number

Watch Video Solution

13. A committee of two persons is selected from two men and two women.What is the probability that the committee will have (i) no men (ii)two men

Watch Video Solution

14. A bag contains 9 dics of which 4 are red,3 are blue and 2 are yellow. The discs are similar in shape and size. A disc is drawn at random from the bag. Calculate the probability that it be Blue.

Watch Video Solution

Section D

1. Draw the graph of the signum function write its domain and range.

Watch Video Solution

2. Prove that : $\frac{\sin 5x - 2\sin 3x + \sin x}{\cos 5x - \cos x} = \tan x$

Watch Video Solution

Watch Video Solution

3. $1^3 + 2^3 + 3^3 + \ldots\ldots\ldots\ldots + n^3 = \frac{n^2(n+1)^2}{4} \forall n \in N.$

Watch Video Solution

4. Solve the following system of inequalities graphivally $2x + y > +4, x + y \leq 3, 2x - 3y \leq 6,$

Watch Video Solution

5. A committee of 7 has to be formed from 9 boys and 4 girls. In how many ways can this be done when the committee consists of

(i) exactly 3 girls

(ii) atleast 3 girls?

(iii) atmost 3 girls?

Watch Video Solution

6. State and prove Binomial theorem for a positive integer index.

Watch Video Solution

7. Derive a formula for the angle between two lines with slopes m_1 and m_2. Hence the slopes of the lines which make an angle $\frac{\pi}{4}$ with the line $x - 2y + 5 = 0$

Watch Video Solution

8. Derive section formula in 3-D for internal division . Also find the co-ordinates of mid points of the line joining the points $A(1, -2, 3)$ and $B(3, 4, 8)$?

View Text Solution

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

Watch Video Solution

10. Find the mean deviation about the mean for the following data.

Marks obtained	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80
Number of students	2	3	8	14	8	3	2

Watch Video Solution

Section E

1. (a)Derive geometrically that $\cos(x+y) = \cos x \cos y - \sin x \sin y$.Hence deduce the valueof $\cos 75^\circ$

Watch Video Solution

2. Find the sum to n terms of the series , $\frac{1}{1.2} + \frac{1}{2.3} + \frac{1}{3.4} + \ldots.$?

Watch Video Solution

3. Define ellipse and derive its equation in the form $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1(a > b)$.

Watch Video Solution

4. (b) Find the derivative of $\frac{x^5 - \cos x}{\sin x}$ with respect to x.

Watch Video Solution