

### MATHS

# BOOKS - JEEVITH PUBLICATIONS MATHS (KANNADA ENGLISH)

## **ANNUAL EXAMINATION QUESTION PAPER -2**



- 1. Write the following sets is roster form:
- $A = \{x \colon x ext{is an integer and} 3 < x < 7\}$





5. Evaluate 
$$\frac{n!}{(n-r)!}$$
 , when n=6 and r=2 ?

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**6.** If 
$$a_n=rac{2n-3}{6}$$
 , then find  $a_{10}$  ?

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7. Find the slope of the line 3x - 4y - 2 = 0 ?



8. Evaluate 
$$\lim_{x \to 1} \left[ \frac{x^2 + 1}{x + 100} \right]$$
?  
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9. Write the negation of the statement "Every natural number is greater than zero"?

I

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10. A coin is tossed three times. Find the number of

elemnts in 'Sample space '?

#### Section **B**

1. Let  $U=\{1,2,3,4,5,6\}, a=\{2,3\}, B=\{3,4,5\}$  , find  $(A\cup B)$  ?

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2. If X and Y are two such that n(X) = 17, n(Y) = 23 and  $n(X \cap Y) = 5$ , find  $n(X \cup Y)$ .

**3.** If f(x)=2x-5, find the value of f(0) and f(7)?



**6.** Express the complex number (1-i) - (-1+6i)

in a + ib form



7. Solve  $5x-3 \ge 3x-5$ ? Show the graph of the solution

on number line ?

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

**9.** Find the distance between the following parallel lines

3x + 4y + 2 = 0  $(ax + by + c_1 = 0)$ 

3x + 4y - 7 = 0  $(ax + by + c_2 = 0)$ 

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10. Show that the points P(- 2, 3, 5), Q (1, 2, 3) and R(7,

0, -1) are collinear.



11. Evaluate 
$$\lim_{x o 3} rac{x^4-81}{2x^2-5x-3}$$



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



**14.** One card is drawn from a well shuffled deck of 52 cards. If each outcome is equally likely, calculate the probability that the card will be (a) a diamond (b) not a diamond (c) a black card.

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#### Section C

**1.** In a survey of 400 students in a school, 100 were listed as taking apple juice, 150 as taking orange juice and 75 were listed as taking both apple as well as

orange juice. Find how many students were taking

neither apple juice nor orange juice.



2. Let 
$$f(x) = x^2, g(x) = 2x + 1$$
 be two functions.

Then find

(i) (f + g) (x) (ii) (f - g) (x) (iii) (fg) (x)

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**3.** Find the general solution of  $\cot x = -\sqrt{3}$  ?

**4.** Solve: 
$$2x^2 + x + 1 = 0$$



**6.** Find the number of arrangement of the letters of the word "INDEPENDENCE" In how many of these arrangements ?

(i) do the words start with P?

(ii) do the words begin with I and end in P?



 $\left(x+2y
ight)^9$ 



8. Insert 6 numbers between 3 and 24 so that the

resulting sequence is an A.P.



9. In a G. P the3<sup>rd</sup> term is 24 and the 6<sup>th</sup> term is 192.
Find the 10<sup>th</sup> term ?
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10. Find the centre and radius of the circle

$$x^2 + y^2 - 4x - 8y - 45 = 0$$
 ?

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11. Find 
$$\lim_{x o 0} f(x)$$
 and  $\lim_{x o 1} f(x)$ , where  $f(x) = \left\{egin{array}{ccc} 2x+3, & x \leq 0 \ 3(x+1), & x > 0 \end{array}
ight.$ 

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

irrational number

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**13.** Two dice are thrown and the sum of number which come up on the dice is noted . Let us consider the event associated with the experiment A: the sum is even :B: the sum is miltiple of 3 . Check whether A and B are mutually exclusive events or not ?

14. Two students Anil and Ashima appeared in an examination . The probability that Anil will quanlify the examination is 0.05 and that Ashima will qualify the examination is 0.10 . The probability hat both will qualify the examination is 0.02 . Find the Probability that both Anil and Ashima will not qualify the examination ?

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Section D

1. Define modulus function, draw the graph of it, write

its domain and range.



- **D**.
- C.
- D.

#### Answer: LHS =RHS





**4.** Solve the following system of inequalities graphically  $x+2y\leq 8, 2x+y\leq 8, x\geq 0, y\geq 0.$ 

**5.** A group consists of 4 girls and 7 boys .In how many ways can a team of 5 members be selected , if the term has (i) no girls (ii) atleast one boy and one girl ?



**7.** Obtain the equation of a plane in the intercept form.



**9.** Find the mean deviation about the mean for the following data ?

#### Section E



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2. Find the sum to n terms of the series whose  $n^{th}$  terms is n(n+3).

3. Derive the equation of the ellipse in the form  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1.$ 

