aglasem.com

FOR KARNATAKA CLASS 11 PREPARATION

Karnataka 1st PUC Model Question Paper 2027 for Basic Maths (Paper 1)

EXAM	YEAR	TYPE	SUBJECT
Karnataka Class 11	2027	Sample Paper	Maths

GOVERNMENT OF KARNATAKA
DEPARTMENT OF SCHOOL EDUCATION (PRE-UNIVERSITY)
I PUC ANNUAL EXAMINATION 2026-27
MODEL QUESTION PAPER 1
SUBJECT CODE: 75
BASIC MATHEMATICS

Time: 3 hours **Max. Marks: 80**

General Instructions:

i) The question paper has 5 Parts A,B,C,D and E. Answer all the Parts.
ii) Part - A carries 20 marks, Part - B carries 12 marks, Part - C carries 18 marks, Part - D carries 20 marks and Part - E carries 10 marks.
iii) Write the question number properly as indicated in the question paper.

SPART - A

I. Answer ALL the multiple choice questions: **10 x 1 = 10**

1. The conjugate of Z = 2+3i is

   a) -2+3i b) -2-3i c) 2-3i d) $\frac{1}{2+3i}$

2. If A = {1} and B= {2} then find B x A

   a) {1,2} b) { } c) {(1,2)} d) {(2,1)}

3. The value of $(\frac{2a}{5b})^3)^3$ in its simplest form is

   a) $\frac{8a^9}{125b^3}$ b) $\frac{2a^6}{5b}$ c) $\frac{8a^6}{125b}$ d) $\frac{2a^9}{5b^3}$

4. The value of $log_{\sqrt{3}} 27$ is

   a) 6 b) 3 c) 7 d) 4

5. The 6^{th} term of the GP 3, 6, 12, … is

   a) 108 b) 96 c) 88 d)60

6. The value of x in $7x - 5[x - \{7 - 6(x - 3)\}] = 3x + 1$is

   a) 4 b) 7 c) 8 d) 3

7. If $5x - 3 < 3x + 1$ when x is real number then $x \in$

   a) $(-\infty, 2)$ b) $(2,\infty)$ c) $(-\infty, 2]$ d) $(-\infty,-2)$

8. The simple interest on ₹600 for 3 years 3 months at 4% p.a is

   a) 78 b) 87 c) 67 d) 85

9. The value of $(1 - \sin^2\theta).\sec^2\theta$ is

a) 0 b) 1 c)2 d) 3

10. The equation of $x - axis$ is

a) $x = 0$ b) $y = 0$ c) $xy = 0$ d) $x = y$

II Match the following: **5 x 1 = 5**

11.

A	**B**
a) Value of f(3) when f(x)= 3x-5	(i) -3/5
b) If average age of 10 boys is 13 years, then sum of their Ages is	(ii) 1/4
c) Convert 25% into fraction	(iii) 50000
d) Slope of $3x + 5y - 11 = 0$.	(iv) 4
e) $P\infty$ of Rs 5000 at 5% p.a is	(v) 130
	(vi)100000

III. Fill in the blanks by choosing appropriate answer from given options: **5 x 1 = 5**

(23, 2, 12, 1, 0, 120)

12. LCM of 8, 10 and 12 is _____.
13. If (2x + 4, 3x + y) = (8, 0) then value of x is _____.
14. The 11^{th} term of the A.P 3, 5, 7, 9,….. is _____.
15. The value of x in 2(x-3) = 9 +3(x-9)is _____.
16. Find the slope of the line with inclination $\frac{\pi}{4}$ _____.

PART-B

IV. Answer any SIX questions: **6x2=12**

17. Find the HCF of 12,15 and 18.
18. If f(x) = x-1 and g(x) = $2x^2$ -3 find fog(1) and gof(2)
19. If U= {a,b,c,d,e,f,g}, A= {a,b,c} and B = {b,d,f,g} find (A∩B)'
20. Which term of the GP 4, 6, 9, … is $\frac{81}{4}$?
21. If a = 1, d = 7, T_n = 64, find n and S_n.
22. Solve $\frac{x+19}{5} - 3 = \frac{x}{4}$.
23. Solve $3x - 7 > 2(x - 6)$ and $6 - x > 11 - 2x, x \in R$.
24. Prove that $(1 + \tan^2\theta).(1 - \sin^2\theta) = 1$.
25. Find the equation of the line joining the points $(-1, -3)$ and $(6, 11)$.

PART-C

V. Answer any SIX questions: **6x3=18**

26. Prove that $\sqrt{2}$ is an irrational number
27. If A={4,6}, B={6,8,10} and C={8,10,12}. Verify Ax(B-C)=(AxB)-(AxC).
28. Prove that $\left(\frac{x}{x^b}\right)^{\frac{b}{a}} \left(\frac{x}{x^c}\right)^{\frac{c}{b}} \left(\frac{x}{x^a}\right)^{\frac{a}{c}} = 1$
29. If α *and* β are the roots of $2x^2 + 3x + 7 = 0$ find the values of $\frac{1}{\alpha} + \frac{1}{\beta}$.
30. A solution is to be kept between 68°F and 77°F. What is the range in temperature in degree celcius (C) if the celcius /Fahrenheit conversion formula is given by $F = \frac{9}{5}C + 32$?
31. Find the compound interest on ₹6000 for 3 years at 5% p.a if interest is calculated half yearly.
32. A schools runs in morning and afternoon shift and employees 40 teachers. The average salary of 25 teachers working in the morning shift is Rs. 2800/- and the average salary of teachers working the afternoon shift is Rs. 3000/- find
    (i) The average salary of the teachers in the school.
    (ii) The average salary is 5 teachers shifted from morning to afternoon shift.
33. If $\cot A = \frac{5}{12}$ *and* θ *is acute*. Show that $2\,\mathrm{cosec}\,\theta - 4\sec\theta = -\frac{247}{30}$.
34. Find the equation of the locus of all points equidistant from the point (2, 4) and y axis.

PART-D

VI. Answer any FOUR questions: **4x5 =20**

35. In a survey of 100 persons it was found that 28 read magazine A, 30 read magazine B, 42 read magazine C, 8 read magazine A and B, 10 read magazine A and C, 5 read magazines B and C while 3 read all the three magazines. Find the number of people who read none of the 3 magazines and also find how many read only magazine C. Represent the result using Venn Diagram.
36. Find the value of $\frac{12.567\times15.674}{0.5968\times19.78}$ using log table
37. Find an integral root between -3 and 3 by inspection and then using synthetic division solve the equation $x^3 - 2x^2 - 29x - 42 = 0$.
38. A person borrowed ₹65000 at 8% simple interest for 4 years and lent out the money for 10% compound interest for 4 years. How much did the person gain?

39. A company needs ₹1,50,000 at the end of 10 years from now. It would like to set a side an equal amount each year from its profit. If the present market rate is 15%. How much should be the annual amount to be invested?
40. Rohan sold to Raksha cinema tickets at a gain of 10%. Raksha sold it back to Rohan at a loss of 10%. In the whole process Rohan gain Rs 55 in all . Find the price at which Rohan originally bought the tickets.
41. Find the equations of the medians of the triangle formed by the points $(-1, 3), (-3, 5)$ and $(7, -9)$.

PART-E

VII Answer the following questions:

42. Find the sum to n terms of the series 4 + 44 + 444 + … **(6)**

(or)

Verify that the points (1,6),(-1,-2),(4,1) and (-4,3) are the vertices of a rectangle.

43. A publishing house finds that the production of each book and the cost of the book are directly attributed. If the cost of each book is Rs 30 and the fixed costs are Rs 15,000, and the selling price of each book is Rs 45, then determine: **(4)**
    a. Revenue function
    b. Cost function
    c. Profit function
    d. Break-even point function

(or)

Find x if $x \sin 30 \cdot \cos^2 45 = \frac{\cot^2 30 . \sec 60 . \tan 45}{\operatorname{cosec}^2 45 . \operatorname{cosec} 30}$