



**KJ-1700**

**BCA (Part - I Supplementary, II, III)**  
Term End Examination, 2020

**COMPUTER SCIENCE**

Paper - XI

Bridge Course

*Time* : Three Hours]      [*Maximum Marks* : 50

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**Note** : Answer any **two** parts from each Unit. All questions carry equal marks.

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**Unit-I**

1. (a) Resolve

$$\frac{x^2}{(x-1)(x+1)(x-2)}$$

into partial fraction.

(b) The 5th and 2nd term of a G.P. are 81 and 24. Find the series.

( 2 )

- (c) If  $A = \begin{bmatrix} 1 & -1 \\ -1 & 1 \end{bmatrix}$ , then prove that  $A^2 = 2A$ ,  
 $A^3 = 4A$ .

### Unit-II

2. (a) How many distinct words can be formed by taking the letter of the word 'INDIA' ?  
(b) Find the 7th term in the expansion of

$$\left( \frac{4x}{5} + \frac{5}{2x} \right)^8.$$

- (c) Prove that  $7C_2 + 7C_3 = 8C_3$ .

### Unit-III

3. (a) Prove that :

$$(\sin A + \cos A) (\tan A + \cot A) = \sec A + \operatorname{cosec} A$$

- (b) If  $\tan \theta = \frac{3}{4}$ , then find the value of  $\sin \theta$  and  $\sec \theta$ .

- (c) Find the value of  $\left[ 2 \tan^{-1} \frac{1}{5} - \frac{\pi}{4} \right]$ .

( 3 )

**Unit-IV**

4. (a) Find out the locus of the point whose coordinates are given by  $x = 3\cos t$  and  $y = 4\sin t$ .
- (b) If the lines  $7x - 5y = 12$  and  $5x + py = 4$  are perpendicular to each other, then find the value of  $p$ .
- (c) Find the value of acute angle between the lines :
- $$y = 3x + 7$$
- $$3y - x = 8$$

**Unit-V**

5. (a) Calculate the mode of the following distribution :

Class	Frequency
4-8	10
8-12	12
12-16	16
16-20	14
20-24	10
24-28	8
28-32	17
32-36	5
36-40	4

( 4 )

(b) Calculate the variance and standard deviation from the data given below :

$x$	3.5	4.5	5.5	6.5	7.5	8.5	9.5
$y$	3	7	22	60	85	32	8

(c) Find out the range of the following discrete series :

26, 28, 28, 26, 28, 30, 27, 29, 24