

(4) Code No. : C-200

Roll No.....

Total No. of Sections : 03

Total No. of Printed Pages : 04

Q.3 Prove that :

OR

Solve : $\tan^{-1} 2a + \tan^{-1} 3x = \frac{\pi}{4}$

Q.4 If a parabolic reflector is 20 cm in diameter and 5 cm deep, find its focus

OR

Find the equation of the circle which passes through the point of intersection of the lines _____ and _____ and whose centre is _____.

Q.5 If the mean of the following distribution is 54. find the value of P :

Class	: 0-20	20-40	40-60	60-80	80-100
Frequency	: 7	P	10	9	13

OR

Find the mean and standard deviation of the following distribution :

Marks	: 20-30	30-40	40-50	50-60	60-70
No. of Students	: 3	6	13	15	14
	70-80	80-90			
	5	4			

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Code No. : C-200

Annual Examination - 2018

BCA - I / II / III

BCA - 107

BRIDGE COURSES

Max.Marks : 50

Time : 3 Hrs.

Min.Marks : 20

Note : Section 'A', containing 10 very short-answer-type questions, is compulsory. Section 'B' consists of short answer type questions and Section 'C' consists of long answer type questions. Section 'A' has to be solved first.

~~Q.5 = 20 = 0~~
 $\tan^{-1} \frac{11}{-2} + \tan^{-1} \frac{7}{24} = \tan^{-1} \frac{1}{2}$

Section - 'A'

Answer the following very short-answer-type questions in one or two sentences : (1 × 10 = 10)

Q.1 Find the value of _____

Q.2 Find the value of _____

Q.3 Write the slope of straight line _____

Q.4 Find the value of _____

Q.5 The following numbers of goals were scored by a team in a series of 10 matches..

2, 3, 4, 5, 0, 1, 3, 3, 4, 3. Find the mean.

P.T.O.

(2) Code No. : C-200

(3) Code No. : C-200

Q.6 If $\sin \theta = \frac{1}{2}$, find the value of $\cos \theta$

OR

Q.7 If $\tan \theta = \frac{1}{\sqrt{3}}$, then, find the value

Solve :

of $P\left(\frac{B}{A}\right) + P\left(\frac{A}{B}\right)$

Q.4 Find the equation of the acute angle between the lines $3x + 4y - 11 = 0$ and $12x - 5y - 2 = 0$

OR

Q.8 Which term of G.P has first term $a=5$ and the common ratio $r=2$?

Find the equation of the hyperbola whose focus is $(1, 2)$, directrix the line $x = 4$ and eccentricity $e = \frac{3}{2}$

Q.9 Write the axis of symmetry of the parabola $y^2 = x$.

Q.5 Calculate the mean deviation about median from the following data : 340, 150, 210, 240, 300, 310, 320.

Q.10 Write the coordinate of the centre of the circle passing through $(1, 1)$, $(2, 2)$ and $(3, 3)$.

OR

Section - 'B'

Find the mean of the following frequency distribution.

Answer the following questions : (3 5=15)

Class Interval	: 0-10	10-20	20-30	30-40	40-50
No. of Worker's (f)	: 7	10	15	8	10

Q.1 The first term of an A.P. is 5, the common difference is 3 and the last term is 80, find the number of term.

~~Q.2 If $\sin \theta = \frac{1}{2}$, find the value of $\cos \theta$.~~
~~Q.3 If $\tan \theta = \frac{1}{\sqrt{3}}$, then, find the value of $\sec \theta$.~~
~~Q.4 Find the equation of the acute angle between the lines $3x + 4y - 11 = 0$ and $12x - 5y - 2 = 0$.~~
~~Q.5 Calculate the mean deviation about median from the following data : 340, 150, 210, 240, 300, 310, 320.~~
~~Q.6 If $\sin \theta = \frac{1}{2}$, find the value of $\cos \theta$.~~
~~Q.7 If $\tan \theta = \frac{1}{\sqrt{3}}$, then, find the value of $\sec \theta$.~~
~~Q.8 Which term of G.P has first term $a=5$ and the common ratio $r=2$?~~
~~Q.9 Write the axis of symmetry of the parabola $y^2 = x$.~~
~~Q.10 Write the coordinate of the centre of the circle passing through $(1, 1)$, $(2, 2)$ and $(3, 3)$.~~
~~Q.11 Prove that : ${}^n C_r + {}^n C_{r-1} = {}^{n+1} C_r$~~
~~Q.12 Prove that : $1 + \frac{2}{2} + \frac{3}{3} + \frac{4}{4} + \dots = e$~~
~~Q.13 Prove that : $1^2 + 3^2 + 5^2 + \dots + (2n-1)^2 = \frac{n(2n-1)(2n+1)}{3}$~~
~~Q.14 Find the inverse of : $\begin{bmatrix} 3 & 2 & 0 \\ 2 & 1 & 1 \\ 1 & 1 & 3 \end{bmatrix}$~~
~~Q.15 Find the partial fraction of the function : $\frac{1}{x^2 - 1}$~~
~~Q.16 Find n if : $\sin^{-1} \left(\frac{1}{\sqrt{2}} \right) = \frac{\pi}{4}$~~
~~Q.17 By induction method prove that : $1^2 + 3^2 + 5^2 + \dots + (2n-1)^2 = \frac{n(2n-1)(2n+1)}{3}$~~
~~Q.18 Prove that : $\sin^{-1} \left(\frac{1}{\sqrt{2}} \right) = \frac{\pi}{4}$~~
~~Q.19 Find the mean of the following frequency distribution.~~
~~Q.20 Calculate the mean deviation about median from the following data : 340, 150, 210, 240, 300, 310, 320.~~

OR

Section - 'C'

Answer the following questions : (5 5=25)

Find the value of determinant :

Q.1 Find the inverse of :

OR

Q.2 Prove that : ${}^n C_r + {}^n C_{r-1} = {}^{n+1} C_r$

Find the partial fraction of the function :

OR

Prove that : $1 + \frac{2}{2} + \frac{3}{3} + \frac{4}{4} + \dots = e$

Q.2 Find n if :

OR

Q.3 Prove that :

By induction method prove that:

$$1^2 + 3^2 + 5^2 + \dots + (2n-1)^2 = \frac{n(2n-1)(2n+1)}{3}$$

P.T.O.