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BBA-102

Business Mathematics

Bachelor of Business Administration (BBA-10/12/16/17)

1st Semester Examination 2019

Time : 3 Hrs **Maximum Marks : 80**

Note : This paper is of Eighty (80) marks diveded into three (03) sections A,B and C. Attempt the questions contained in these sections according to the detailed instructions given therein.

Section –A

(Long Answer Type Questions)

Note : Section 'A' contains four (04) long answer type questions of Nineteen (19) marks each. Learners are required to answer any two (02) questions only. (2x19=38)

1. i) Three numbers are in G.P. Their product is 64 and sum is 124/5 find them.

   ii) If a,b,c are in GP and $a^x=b^y=c^z$, prove that 1/x+1/z=2/y.

2. Sum to n terms the series

   $1^2+(1^2+2^2)+(1^2+2^2+3^2)+$.....

3. i) If $x+y=\begin{matrix}5 & 2\\ 0 & 9\end{matrix}$ and $x-y=\begin{matrix}3 & 6\\ 0 & -1\end{matrix}$ then calculate x and y.

ii) if $a^2+b^2= 7ab$, Prove that log 1/3 (a+b)=1/2 (log a + log b).

4. The first three terms in the expansion of a binomial are 729,7290 and 30,375. find it.

Section – B

(Short- answer- type questions)

Note : Section 'B' contains eight (08) short answer type questions of Eight (08) marks each. Learners are required to answer any four (04) questions only. (4 x 8 =32)

1. show that :

$$(\sqrt{3}+\sqrt{2})3+(\sqrt{3}-\sqrt{2})3=18\sqrt{3}.$$

2. if

$$A=\begin{matrix}1 & 2 & 3\\ 4 & 5 & 6\end{matrix} \text{ and } B=\begin{matrix}0 & 1 & 2\\ 3 & 4 & 5\end{matrix}$$

verify A+B = B+A.

3. Determine dy/dx, where x=a (θ+sinθ) and y = a (1-cosθ).

4. If

$$A=\begin{matrix}1 & 2\\ 3 & 4\\ 5 & 6\end{matrix}$$ find a matrix B, such that A + B = 0

5. if

$$A=\begin{matrix}0 & 1\\ 1 & 0\end{matrix}\quad B=\begin{matrix}0 & -i\\ i & 0\end{matrix}$$ show that, AB=-BA and $A^2= B^2=I$.

6. Evaluate

$$\frac{xdx}{1+\cos x}$$

7. Evaluate

i) $\frac{1}{4x^2+4x+10}$ ii) $\frac{1}{x^2+x+1}$

8. Sum the series $1^2+3^2+5^2+7^2+$.....upto n terms.

Section –C
(Objective Type Questions)

Note : Section 'C' contains ten (10) objective type questions of one (01) mark each. All questions of this section are compulsory. (10 x 1 = 10)

Write True/False against the following :

1. If $a=b^c$, $b=c^a$, and $c=a^b$, then abc=1
(True/False)
2. The main value of $\cot^{-1}\frac{-1}{\sqrt{3}} = \frac{2\pi}{3}$
(True/False)
3. Two sets are equal if they have same elements is called equal sets. (True/False)
4. A set that has no elements is called power set.
(True/False)

5. The constant number which is multiplied to get the next number is a G.P is called as common ratio.

(True/False)

Fill in the blancks -

6. If A = $\begin{matrix} 1 & -3 & 1 \\ 2 & 4 & -1 \\ 3 & 5 & 6 \end{matrix}$ then diagonal items of A is.....

7. MC = d/dx.....

8. If A $\begin{matrix} 2 & 1 \\ 0 & 3 \end{matrix}$ and B $\begin{matrix} 7 & 0 \\ 2 & 3 \end{matrix}$ then AB = ...

9. Value of $\begin{matrix} 2 & 4 \\ 1 & 2 \end{matrix}$ = 2 (2) .....

10. $\text{Log } b\frac{x}{y}$ $\text{Log } bx$ ..... Log .

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