Q.2 By mathematical induction method, prove that :

upto n terms

OR

Find the middle term in the expansion of $\left(2a-\frac{a^2}{4}\right)^9$.

Q.3 Prove that

OR

If $\sin A=\frac{3}{5}$ and then find the value of $\sin(A+B)$.

Q.4 Find the equation of the straight line which passes through the point (7, 1) and paralled to the straight line which passes through the points (2, –2) and (4, 8).

OR

Find the equation of the circle which touch the straight line and whose centre is (3, 4).

Q.5 Compute the mode for the following frequency distribution :

Size of items :	0-4	4-8	8-12	12-16	16-20	20-24	24-28	28-32	32-36	36-40
Frequency :	5	7	9	17	12	10	6	3	1	0

OR

Find the coefficient of standard deviation of the following data :

Interval	0-10	10-20	20-30	30-40	40-50
Frequency	2	10	8	4	6

---x---

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Annual Examination - 2019

BCA - I / II / III

BCA - 107

BRIDGE COURSE

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.

Section - 'A'

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

Q.1 Write the first 3 terms of the sequence which is defined by

.

Q.2 If $A=\begin{bmatrix}3 & 4 & 5\\ 2 & 6 & 1\end{bmatrix}$ and then find the value .

Q.3 Write the series of

Q.4 Write the 10^{th} term of the series

Q.5 Find the value of $\sin 60^\circ$; $\tan 30^\circ$; $\cos 45^\circ$

Q.6 Write the value do

Q.7 On which axis do the following points lie;

(i) (–4, 0) (ii) (5, 0)

Q.8 Write the condition for two lines are perpendicular to each other.

Q.9 Find the mode of the following data :

3, 5, 7, 4, 5, 3, 5, 6, 8, 9, 5, 3, 5, 3, 6, 9, 7, 4

Q.10 Arithmetic mean of 4,7, x and 9 is 7. Find the value of x.

Section - 'B'

Solve the following questins : (3 5=15)

Q.1 If 6^{th} term of a GP is 32 and its 8^{th} term is 128, then find the value of the common ratio.

OR

If and then find the value of BA.

Q.2 Prove that :

OR

Prove that : $\frac{{}^{n}C_{r}}{{}^{n}C_{r-1}} = \frac{n-r+1}{r}$

Q.3 Prove that : $\cos 60^{\circ} = \frac{1-\tan^{2} 30^{\circ}}{1+\tan^{2} 30^{\circ}}$

OR

A tower is meters high. Find the angle of elevation if its top from a point 100 meters away from its foot.

Q.4 Write the equation of the circle whose centre is (–5, 4) and radius is 9.

OR

Find the equation of the straight line which passes through the point and parallel to the straight line $3x+2y-7=0$.

Q.5 Find the mean of the following distribution :

x :	4	6	9	10	15
f :	5	10	10	7	8

OR

Obtain the median for the following frequency distribution :

x :	1	2	3	4	5	6	7	8	9
f :	8	10	11	16	20	25	15	9	6

Section - 'C'

Solve the following questins : (5x5=25)

Q.1 Find the partial fraction of the function

OR

Find the value of :