

The University of Burdwan

B.C.A(H) Part-III Examination ,2020

Paper Name: Mathematics-III

Paper Code: BCA-301

F.M:40

Time: 2 Hrs

Answer any *eight* Questions:

5x8=40

1. Calculate standard deviation from the following data. The age distribution of 540 members of a parliament is given below.

Age in Years	30	40	50	60	70
No. of members	64	132	153	140	51

2. Calculate the rank correlation coefficient of the following data:

Series A:	52	63	45	36	72	65	45	25
Series B:	62	53	51	25	79	43	60	33

3. Find the missing frequency from the following frequency distribution if $A.M = 28.8$

Wages (RS):	0-10	10-20	20-30	30-40	40-50	50-60
Frequency:	4	6	20	?	7	3

4. Find the probability of getting

(i) all cards of the same suite

(ii) one card from each suite

when four cards are drawn at random from a pack of 52 playing cards.

5. Find the mean, standard deviation of Binomial distribution.
6. Find the root of the equation $x^3 - x - 1 = 0$, using Regula-Falsi method.
7. Evaluate $y(0.02)$ by Taylor's method from the differential equation

$$\frac{dy}{dx} = x + y^2$$
 when given $y(0) = 0$ (correct up to 4 decimal places).
8. Evaluate $\int_0^1 \frac{dx}{1+x^2}$ (correct up to five decimal places) using trapezoidal rule taking $n=5$.
9. Write down the algorithm to evaluate the integration using Simson 1/3 rule.
10. Use Lagrange's interpolation to find the value of $f(x)$, for $x=0$, using the following table.

X	-1	-2	2	4
f(x)	-1	-9	11	69