NJR/KS/18/6608

Bachelor of Commerce (Computer Application) (B.C.C.A.) Semester–IV (C.B.C.S.)

Examination

MATHEMATICS

Compulsory Paper—1

Time : Three Hours] [Maximum Marks : 80

N.B. :— (1) Draw well labelled diagram wherever necessary.
(2) All questions are compulsory.

PART–A

N.B. :— (1) Each question carries **2** marks.
(2) Answers should not be more than **five** lines.

1. (a) Define Permutation.
   (b) What is empty set ?
   (c) What is function ?
   (d) Define Logarithm.
   (e) What is cumulative frequency ?
   (f) What is arithmetic mean ?
   (g) What is skewness ?
   (h) Define probability. 8×2=16

PART–B

N.B. :— (1) Each question carries **3** marks.
(2) Answer should not be more than **ten** lines.

2. (a) Evaluate $\urcorner_{P_3}$, $\urcorner_{P_4}$, $\urcorner_{P_5}$
   (b) If A = {2, 4, 6, 9, 7}, B = {3, 6, 9} find A∪B and A–B.
   (c) What are the various Laws of Logarithm ?
   (d) Find the 6^{th} term of Geometric progression 4, 8, 16.
   (e) Calculate mean of the following data :

Marks	5	6	7	8	9
Frequency	3	8	11	16	7

   (f) State the advantages of arithmetic mean.
   (g) What is curve fitting method ?
   (h) What is Time Series ? 8×3=24

PART–C

N.B. :— (1) Each question carries **5 or 10** marks.
(2) Answer should not be more than **400** words for **5** marks questions and **600** words for **10** marks questions respectively.

3. (A) What are the types of sets ? 5
   (B) Write differences between Primary Data and Secondary Data. 5

OR

(C) If A = (4, 5, 8, 12), B = (1, 4, 6, 9) and C = (1, 2, 4, 7, 8, 10) then find :
(1) A – B (2) B – C (3) A – C (4) A – (B – A) (5) A – (C – B) 10

4. (A) Find compound interest of Rs. 8,000 at interest rate of 6% per annum. Interest is payable yearly. 5

(B) What is logarithm ? Explain law of logarithm with example. 5

OR

(C) Find the value of :

(1) $1\log_5 125$ (2) $1\log_3 81$

(3) log 0.2 0.008 (4) $1\log_3 729$ using exponent rule 10

5. (A) Calculate the arithmetic mean of the daily income of 10 families :

(a)	Families	1	2	3	4	5	6	7	8	9	10
(b)	Income Rs.	18	20	35	55	38	54	100	85	37	53

5

(B) Calculate standard deviation from the following :

12, 17, 14, 11, 21, 28, 27, 29, 38 5

OR

(C) Following is the frequency distribution of marks obtained by 50 students in Statistics. Calculate median and mode :

Marks	**No. of students**
0-10	4
10-20	6
20-30	20
30-40	10
40-50	7
50-60	3

10

6. (A) Fit a least square line for the following data :

X	1	2	3	4	5
Y	2	5	3	8	7

5

(B) Calculate skewness from the following distribution :

X series	**:**	1	2	3	4	5	6	7
Frequency	**:**	5	7	3	1	4	6	9

5

OR

(C) $n = 12$, $\Sigma dx = -5$, $\Sigma dx^2 = 91$, $\Sigma dy = -5$, $\Sigma dy^2 = 41$, $\Sigma dxdy = 42$

Calculate co-efficient of correlation. 10