



**EITHER**

4. (a) If  $\log N = 2 \log x - \log y$  then solve for  $N$  in terms of  $x$  and  $y$ . 5  
(b) The 35<sup>th</sup> term of an Arithmetic progression is 69. Find the sum of its 69<sup>th</sup> term. 5

**OR**

(c) Solve :

- (i)  $\log(x + 5) - \log(x - 1) = 1 - \log 2$  10  
(ii)  $\log(x + 2) + \log(x - 7) = 2 \log(x - 4)$

**EITHER**

5. (a) Describe the merits and demerits of mean. 5  
(b) Calculate standard deviation for the following : 5  
12, 17, 14, 11, 21, 28, 27, 29, 38.

**OR**

(c) Calculate arithmetic mean of the daily income of 10 families :

|          |    |    |    |    |    |    |     |    |    |    |    |
|----------|----|----|----|----|----|----|-----|----|----|----|----|
| Families | 1  | 2  | 3  | 4  | 5  | 6  | 7   | 8  | 9  | 10 |    |
|          | 18 | 20 | 35 | 55 | 38 | 54 | 100 | 85 | 37 | 53 | 10 |

**EITHER**

6. (a) A bag contains 2 red, 3 green and 2 blue balls. Two balls are drawn at random. What is the probability that none of the balls drawn is blue ? 5

(b) Prove that :

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

**OR**

(c) Find the regression equation from the following data :

|                |    |    |    |    |    |    |    |    |    |
|----------------|----|----|----|----|----|----|----|----|----|
| Age of Husband | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |    |
| Age of Wife    | 17 | 17 | 18 | 18 | 19 | 19 | 19 | 20 | 10 |