

## TEST PAPER– II

Time Allowed : 3 hours

Full Marks : 100

(Answer all Questions : All Questions are of Equal Value)

1. (a) The average salary per head of all the workers in an Institution is Rs. 60. The average per head of 12 officers is Rs. 400. The average salary per head of the rest is Rs. 56. Find the total number of workers.

(b) Apply the Principle of variation, how long 25 men take to plough 30 hectare, if 5 men take 9 days to plough 10 hectare of land?

2. (a) A grassy rectangular field 2 meter wide footpath running all round it. If the cost of paving the footpath @ Rs. 20.00 per sq. cm is Rs. 2400 and the length of the field is 16 m, find the breadth of the field.

(b) If the Volume of a cylinder is numerically equal to its lateral area, what is the diameter of its base?

3. (a) Find the equation of the straight line that passes through the point (5, - 3) and is parallel to the line  $7x + 9y - 11 = 0$ .

(b) Find the coordinates of vertex, focus and the length of latus rectum of the parallel  $y^2 = 4(x + y)$ .

4. (a) If  $y = \sqrt{1+x^2}$  show that  $y \frac{dy}{dx} = x$

(b) Evaluate : (i)  $\int \log x \, dx$  (ii)  $\int_0^2 x\sqrt{4-x^2} \, dx$ .

5 (a) A.M. of the following incomplete frequency distribution is 1.46. Find the values of  $f_2$  and  $f_3$ .

x :	0	1	2	3	4	5	total
f :	43	$f_2$	$f_3$	25	10	5	200

(b) Marks obtained by 50 students in a weekly test are as follows :

Marks	No. of Students
Less than 5	6
” ” 10	16
” ” 15	36
” ” 20	45
” ” 25	50