

## Model Question paper for online examination

### S.Y.B.Sc.CS Maths-1

1) For  $a, b \in \mathbb{R}$ ,  $(-a)b = \dots\dots\dots$

- a)  $-(ab)$
- b)  $a(-b)$
- c)  $-ab$
- d) \*\* All of the above

2) If  $a, b \in \mathbb{R}$  then

- a)  $a + b \in \mathbb{R}$
- b)  $ab \in \mathbb{R}$
- c)  $a - b \in \mathbb{R}$
- d) \*\* All of the above

3) For  $a \in \mathbb{R}$ , if  $a > 0$ , then  $\dots\dots\dots$

- a) \*\*  $1/a > 0$
- b)  $1/a < 0$
- c)  $1/a = 0$
- d) All the above

4) The general solution of the differential equation  $\frac{dy}{dx} = \sin x \sin y$  is  $\dots\dots\dots$

- a)  $\log|\operatorname{cosec} y - \cot y| - \cos x = c$
- b) \*\*  $\log|\operatorname{cosec} y - \cot y| + \cos x = c$
- c)  $\log|\operatorname{cosec} y - \cot y| - \sin x = c$
- d)  $\operatorname{cosec} y + \cot y = c + \cos x$

5) An ice ball melts at a rate proportional to the amount of ice at that instant. If half the quantity of ice melts in 20 minutes then amount of ice left after 40 minutes is ..... of the original.

a)  $\frac{1}{2}$

b)  $\frac{1}{3}$

c) \*\*  $\frac{1}{4}$

d)  $\frac{1}{8}$

6) Bacteria multiply at a rate proportional to the number present. If the original amount double in 3 hours, then the amount will be 4N in ..... hours

a) 4

b) 5

c) 7

d) \*\* 6

**Note: Option marked with double asterisk (\*\*) is correct option.**