Step Academy official

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STUDENT NAME	
PAPER CODE	52861
TIME ALLOWED	60
Paper Date	10-02-2026

CLASS	New 1st Year (FSC/ICS)
SUBJECT	Mathematics
TOTAL MARKS	25
Paper Type	

Q1. Choose the correct answer. **5X1=5**

1. Trignometric function are .....:

(A) discontinuous **(B)** No circular function **(C)** Periodic **(D)** Not periodic

2. Range of y= sin x is:

(A) (-1,1) **(B)** [-1,1) **(C)** [-1,1] **(D)** (-1,1]

3. Period of 2 cos 3x is equal to:

(A) π **(B)** $\frac{5\pi}{2}$ **(C)** 2π **(D)** None of these

4. Range of y=3sin2x is:

(A) [-1,1] **(B)** [-3,3] **(C)** [-5,5]) **(D)** [-6,6]

5. π is the period of:

(A) Sec θ **(B)** Cos ec θ **(C)** Cotθ **(D)** Sin 3θ

Q2. write the answers of following questions. **5X2=10**

1 . Determine whether the following functions are even, odd or neither odd nor even: tan x + sec x

2 . Determine whether the following functions are even, odd or neither odd nor even: $\frac{1}{\cos ec^3 x}$

3 . Find the maximum and minimum values of the following function: 5-2 cos 3x

4 . Find the maximum and minimum values of the following function: $\frac{1}{5-3\cos(3x-1)}$

5 . Find the periods of the following function: $19\sin\left(\frac{\pi}{20}x\right)$

Q3. write the answers of following questions. **2X5=10**

1 . Find the maximum and minimum values of the following function: 5-2 cos 3x

2 .
A man on the top of a 100 m high light-house is in line with two ships on the same side of it. Whose angles of depression from the man are 17^o and 19^o respectively. Find the distance between the ships.