KILL EXAMS

NCEES

FE Electrical and Computer

NCEES - FE Electrical and Computer (Test Engine)

SETTINGS

Question

An existing synchronous motor is retrofitted from 50Hz, 4-pole construction to a 60Hz
2-pole construction. Calculate the change in its synchronous speed.

(A) 1500 rpm   (B) 2100 rpm

(C) 3600 rpm   (D) 0 rpm

○	**Option A**
○	Option B
○	Option C
○	Option D

SETTINGS

Question

Calculate the slip of a 2-pole 600V induction motor operating at 60Hz with a rotational speed of 3400 rpm.

	Option A
○	Option B
○	Option C
○	Option D
○	

Enter Answer

Submit Answer

SETTINGS

Question

_____ is a triangular pulse with center at $t = -1$, amplitude = 5 and $\tau = 2$.

(A) $5\Lambda \left(\frac{t-1}{2} \right)$

(B) $5\Lambda \left(\frac{t+1}{2} \right)$

(C) $5\Lambda(2(t-1))$

(D) $5\Lambda(2(t+1))$

	Option A
○	Option B
●	
○	Option C
○	Option D

Explanation

Triangular pulse centered at $t = t_0$ (time shifting) with amplitude = A (amplitude scaling) and $\tau = 2$ is given as $A\Lambda \left(\frac{t-t_0}{\tau} \right)$. Therefore, the triangular pulse given in problem statement can be represented as follows:

$$5\Lambda \left(\frac{t - (-1)}{2} \right) = 5\Lambda \left(\frac{t + 1}{2} \right)$$

SETTINGS

Question

Consider a time-domain signal $f(t)$. Which one of the following options correctly describe the impact of $f(4t)$?

(A) $f(4t) = 4f(t)$

(B) $f(4t) = f(t)/4$

(C) Time period of $f(4t)$ increases by 4

(D) Time period of $f(4t)$ decreases by 4

○	Option A
○	Option B
○	Option C
◉	**Option D**

Explanation

$f(4t)$ will compress the time-period of $f(t)$ by a factor of 4. Conversely, $f(t/4)$ will expand the time-period of $f(t)$ by a factor of 4.

Question

Drift current in semi-conductors (at constant temperature) can be increased by _____.

(A) Increasing applied potential   (B) Decreasing applied potential

(C) Increasing surface area   (D) Decreasing surface area

○	Option A
○	Option B
○	Option C
○	Option D

ANSWER   EXPLANATION   REFERENCE