

PART 1 - PHYSICS

Topic : Alternating current

SECTION-A : (Maximum Marks : 4)

This section contains **ONE** question.

Each question has **TWO** lists: **List-I** and **List-II**.

Four options are given representing matching of elements from List-I and List-II. **ONLY ONE** of these four options corresponds to a correct matching.

For each question, choose the option corresponding to the correct answer.

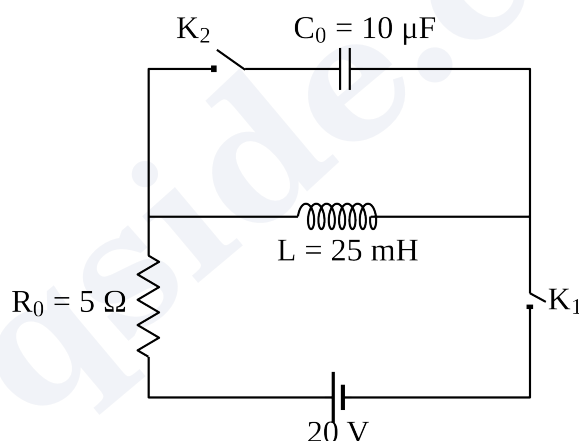
Answer to each question will be evaluated according to the following marking scheme :

Full Marks : +4 If **ONLY** the correct option is chosen;

Zero Marks : 0 If none of the options is chosen (i.e. the question is unanswered);

Negative Marks : -1 In all other cases.

1. The circuit shown in the figure contains an inductor L , a capacitor C_0 , a resistor R_0 and an ideal battery. The circuit also contains two keys K_1 and K_2 . Initially, both the keys are open and there is no charge on the capacitor. At an instant, key K_1 is closed and immediately after this the current in R_0 is found to be I_1 . After a long time, the current attains a steady state value I_2 . Thereafter, K_2 is closed and simultaneously K_1 is opened and the voltage across C_0 oscillates with amplitude V_0 and angular frequency ω_0 .



Match the quantities mentioned in **List-I** with their values in **List-II** and choose the correct option.

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List-I		List-II	
P.	The value of I_1 in Ampere is	1.	0
Q.	The value of I_2 in Ampere is	2.	2
R.	The value of ω_0 in kilo-radians/s is	3.	4
S.	The value of V_0 in Volt is	4.	20
		5.	200

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(A) $P \rightarrow 1$; $Q \rightarrow 3$; $R \rightarrow 2$; $S \rightarrow 5$

(B) $P \rightarrow 1$; $Q \rightarrow 2$; $R \rightarrow 3$; $S \rightarrow 5$

(C) $P \rightarrow 1$; $Q \rightarrow 3$; $R \rightarrow 2$; $S \rightarrow 4$

(D) $P \rightarrow 2$; $Q \rightarrow 5$; $R \rightarrow 3$; $S \rightarrow 4$

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JEE ADVANCED ALTERNATING CURRENT — LC
OSCILLATIONS — PYQS

Test Pattern : JEE (Advanced)

ANSWER KEY

SECTION-A																											
Ques.	1																										
Ans.	A																										