PART 1 - PHYSICS

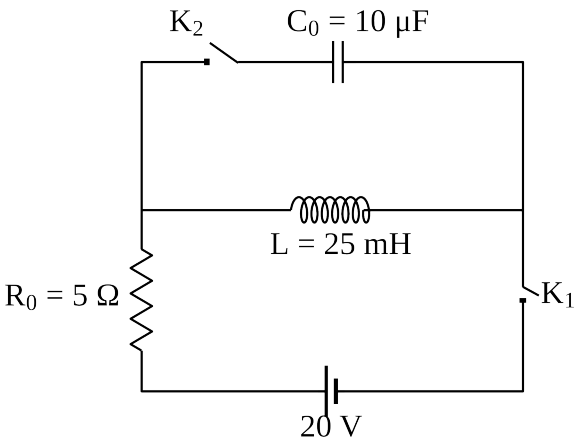
Topic : Alternating current

SECTION–1 : (Maximum Marks : 3)

- 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	: +3	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

Space for Rough Work

(A) P → 1; Q → 3; R → 2; S → 5

(B) P → 1; Q → 2; R → 3; S → 5

(C) P → 1; Q → 3; R → 2; S → 4

(D) P → 2; Q → 5; R → 3; S → 4

Scan or tap for the full solution

Space for Rough Work

JEE ADVANCED ALTERNATING CURRENT — LC OSCILLATIONS — PYQS

Test Pattern : **JEE (Advanced)**

ANSWER KEY

SECTION–1																													
Ques.	1																												
Ans.	**A**																												