

PART 1 - PHYSICS

Topic : Waves

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.

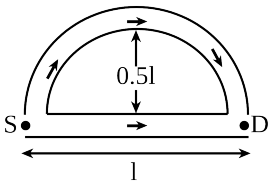
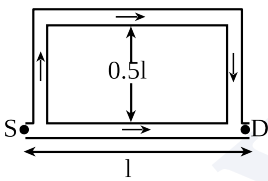
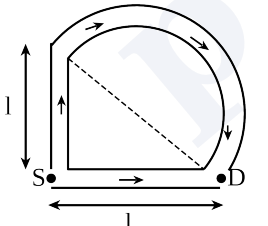
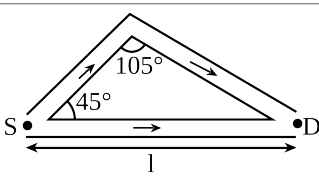
Answer to each question will be evaluated according to the following marking scheme :

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. **List-I** shows four configurations made of straight and semi-circular narrow tubes containing air. A sound wave of wavelength $\lambda = 0.29$ m enters these structures at the point S and a sound detector is placed at D. Between the points S and D, the sound travels only through the tubes. **List-II** contains the possible smallest values of l (refer to the figures) for which the detector D records maximum amplitude. Ignore effects of sharp corners. [Given $\cos(15^\circ) = 0.97$]

List-I		List-II	
P.		1.	1.32 m
Q.		2.	1.19 m
R.		3.	0.51 m
S.		4.	0.29 m
		5.	0.13 m

Space for Rough Work

Choose the option that best describes the match between the entries in List-I to those in List-II.

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(A) $P \rightarrow 4, Q \rightarrow 3, R \rightarrow 5, S \rightarrow 1$

(B) $P \rightarrow 4, Q \rightarrow 3, R \rightarrow 1, S \rightarrow 5$

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

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

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Space for Rough Work

JEE ADVANCED WAVES — PRINCIPLE OF
SUPERPOSITION OF WAVES — PYQS

Test Pattern : JEE (Advanced)

ANSWER KEY

SECTION-A																									
Ques.	1																								
Ans.	D																								