

## PART 1 - MATHEMATICS

Topic : Probability (class 12)

## SECTION-1 : (Maximum Marks : 3)

- This section contains **ONE** question.
- Each question has **FOUR** options (A), (B), (C) and (D). **ONLY ONE** of these four options is the correct answer.
- 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. A student appears for a quiz consisting of only true-false type questions and answers all the questions. The student knows the answers of some questions and guesses the answers for the remaining questions. Whenever the student knows the answer of a question, he gives the correct answer. Assume that the probability of the student giving the correct answer for a question, given that he has guessed it, is  $\frac{1}{2}$ . Also assume that the probability of the answer for a question being guessed, given that the student's answer is correct, is  $\frac{1}{6}$ . Then the probability that the student knows the answer of a randomly chosen question is

[JEE Advanced 2024 Paper 1]

(A)  $\frac{1}{12}$

(B)  $\frac{1}{7}$

(C)  $\frac{5}{7}$

(D)  $\frac{5}{12}$

Scan or tap for the  
full solution

Space for Rough Work

JEE ADVANCED PROBABILITY (CLASS 12) — BAYES' THEOREM — PYQS

Test Pattern : JEE (Advanced)

ANSWER KEY

| SECTION-1 |   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Ques.     | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ans.      | C |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |