

## Exercise – I (JEE-Main Pattern)

### SECTION–A

- This section contains **TWENTY FIVE** questions.
- Each question has **FOUR** options (1), (2), (3) and (4). **ONLY ONE** of these four options is correct.
- For each question, darken the bubble corresponding to the correct option in the ORS.
- For each question, marks will be awarded in one of the following categories:

*Full Marks* : +4, if only the bubble corresponding to the correct option is darkened.

*Zero Marks* : 0, if none of the bubbles is darkened.

*Negative Marks* : -1 in all other cases.

1. If  $a^4 \cdot b^5 = 1$  then the value of  $\log_a(a^5 b^4)$  equals  
 (1) 9/5                                      (2) 4                                      (3) 5                                      (4) 8/5 **MLG001**
2. The expression  $\log_p \log_p \underbrace{\sqrt[p]{\sqrt[p]{\sqrt[p]{\dots \sqrt[p]{p}}}}}_{n \text{ radical sign}}$ , where  $p \geq 2, p \in N; n \in N$  when simplified is  
 (1) independent of  $p$                                       (2) independent of  $p$  and of  $n$   
 (3) dependent on both  $p$  and  $n$                                       (4) positive **MLG002**
3. The number  $\log_2 7$  is  
 (1) an integer                                      (2) a rational number  
 (3) an irrational number                                      (4) a prime number **MLG003**
4. If  $a, b, c$  are positive real numbers such that  $a^{\log_3 7} = 27; b^{\log_7 11} = 49$  and  $c^{\log_{11} 25} = \sqrt{11}$ . The value of  $(a^{(\log_3 7)^2} + b^{(\log_7 11)^2} + c^{(\log_{11} 25)^2})$  equals  
 (1) 489                                      (2) 469                                      (3) 464                                      (4) 400 **MLG004**
5. If  $2^a = 3$  and  $9^b = 4$  then value of  $(ab)$  is -  
 (1) 1                                      (2) 2                                      (3) 3                                      (4) 4 **MLG005**
6.  $\log_{10}(\log_2 3) + \log_{10}(\log_3 4) + \log_{10}(\log_4 5) + \dots + \log_{10}(\log_{1023} 1024)$  simplifies to  
 (1) a composite                                      (2) a prime number  
 (3) rational which is not an integer                                      (4) an integer **MLG006**
7. If  $\log_2(x^2 + 1) + \log_{13}(x^2 + 1) = \log_2(x^2 + 1) \log_{13}(x^2 + 1), (x \neq 0)$ , then  $\log_7(x^2 + 24)$  is equal to  
 (1) 1                                      (2) 2                                      (3) 3                                      (4) 4 **MLG007**

8. Given  $\log_3 a = p = \log_b c$  and  $\log_b 9 = \frac{2}{p^2}$ . If  $\log_9 \left( \frac{a^4 b^3}{c} \right) = \alpha p^3 + \beta p^2 + \gamma p + \delta$  ( $\forall p \in \mathbb{R} - \{0\}$ ), then  $(\alpha + \beta + \gamma + \delta)$  equals  
 (1) 1 (2) 2 (3) 3 (4) 4 **MLG008**
9. If  $60^a = 3$  and  $60^b = 5$  then the value of  $12^{\frac{1-a-b}{2(1-b)}}$  equals  
 (1) 2 (2) 3 (3)  $\sqrt{3}$  (4)  $\sqrt{12}$  **MLG009**
10. Let  $ABC$  be a triangle right angled at  $C$ . The value of  $\frac{\log_{b+c} a + \log_{c-b} a}{\log_{b+c} a \cdot \log_{c-b} a}$  ( $b + c \neq 1, c - b \neq 1$ ) equals where  $a, b, c$  are sides of the triangle  $ABC$  as usual  
 (1) 1 (2) 2 (3) 3 (4)  $1/2$  **MLG010**
11. If  $\alpha$  and  $\beta$  are the roots of the equation  $(\log_2 x)^2 + 4(\log_2 x) - 1 = 0$  then the value of  $\log_\beta \alpha + \log_\alpha \beta$  equals  
 (1) 18 (2) -16 (3) 14 (4) -18 **MLG011**
12. If  $\log_2(4 + \log_3(x)) = 3$ , then sum of digits of  $x$  is -  
 (1) 3 (2) 6 (3) 9 (4) 18 **MLG012**
13. Sum of all the solution(s) of the equation  $\log_{10}(x) + \log_{10}(x + 2) - \log_{10}(5x + 4) = 0$  is -  
 (1) -1 (2) 3 (3) 4 (4) 5 **MLG013**
14. The product of all the solutions of the equation  $x^{1+\log_{10} x} = 100000x$  is -  
 (1) 10 (2)  $10^5$  (3)  $10^{-5}$  (4) 1 **MLG014**
15. If  $x_1$  and  $x_2$  are the roots of equation  $e^{3/2} \cdot x^{2\ell n x} = x^4$ , then the product of the roots of the equation is -  
 (1)  $e^2$  (2)  $e$  (3)  $e^{3/2}$  (4)  $e^{-2}$  **MLG015**
16. If  $\log_a(1 - \sqrt{1+x}) = \log_a(3 - \sqrt{1+x})$ , then number of solutions of the equation is -  
 (1) 0 (2) 1 (3) 2 (4) infinitely many **MLG016**
17. The number of solution(s) of  $\sqrt{\log_3(3x^2) \cdot \log_9(81x)} = \log_9 x^3$  is -  
 (1) 0 (2) 1 (3) 2 (4) 3 **MLG017**
18. If  $\log_{10} \left( \frac{1}{2^x + x - 1} \right) = x(\log_{10} 5 - 1)$ , then  $x =$   
 (1) 4 (2) 3 (3) 2 (4) 1 **MLG018**

19. The number of solutions of the equation  $\log_{x-3}(x^3 - 3x^2 - 4x + 8) = 3$  is equal to  
 (1) 4 (2) 3 (3) 2 (4) 1 MLG019
20. Sum of the roots of the equation  $9^{\log_3(\log_2 x)} = \log_2 x - (\log_2 x)^2 + 1$  is equal to  
 (1) 2 (2) 4 (3) 6 (4) 8 MLG020
21. Number of real solutions of the equation  $\sqrt{\log_{10}(-x)} = \log_{10} \sqrt{x^2}$  is:  
 (1) zero (2) exactly 1 (3) exactly 2 (4) 4 MLG021
22. If  $x_1$  &  $x_2$  are the two values of  $x$  satisfying the equation  $7^{2x^2} - 2(7^{x^2+x+12}) + 7^{2x+24} = 0$ , then  $(x_1 + x_2)$  equals -  
 (1) 0 (2) 1 (3) -1 (4) 7 MLG022
23. If  $\log_{0.3}(x - 1) < \log_{0.09}(x - 1)$ , then  $x$  lies in the interval  
 (1)  $(2, \infty)$  (2)  $(1, 2)$  (3)  $(1, \infty)$  (4) none of these MLG023
24. If  $x$  satisfies the inequality  $\log_{25} x^2 + (\log_5 x)^2 < 2$ , then  $x \in$   
 (1)  $\left(\frac{1}{25}, 5\right)$  (2)  $(1, 2)$  (3)  $(4, 5)$  (4)  $(0, 1)$  MLG024
25. If  $x = \log_2 \left( \sqrt{56 + \sqrt{56 + \sqrt{56 + \sqrt{56 + \dots \infty}}} \right)$ , then which of the following statements holds good?  
 (1)  $x < 0$  (2)  $0 < x < 2$  (3)  $2 < x < 4$  (4)  $3 < x < 4$  MLG025

**SECTION-B**

- This section contains **FIVE** questions. Attempt any five Questions.
- The answer to each question is a **NUMERICAL VALUE**.
- For each question, enter the correct numerical value (If the numerical value has more than two decimal places, **truncate/round-off** the value to **TWO** decimal places; e.g. 6.25, 7.00, -0.33, -.30, 30.27, -127.30, if answer is 11.36777..... then both 11.36 and 11.37 will be correct).
- Answer to each question will be evaluated according to the following marking scheme:  
*Full Marks* : +4, if ONLY the correct numerical value is entered as answer.  
*Zero Marks* : 0 in all other cases.

1. Let  $A$  denotes the value of  $\log_{10} \left( \frac{ab + \sqrt{(ab)^2 - 4(a+b)}}{2} \right) + \log_{10} \left( \frac{ab - \sqrt{(ab)^2 - 4(a+b)}}{2} \right)$   
 when  $a = 43$  and  $b = 57$  and  $B$  denotes the value of the expression  $(2^{\log_6 18}) \cdot (3^{\log_6 3})$ . Find the value of  $(A \cdot B)$ . MLG026

2. There exist positive integers  $A, B$  and  $C$  with no common factor greater than 1 such that  $A \log_{200} 5 + B \log_{200} 2 = C$ , then the value of  $A + B + C$  is **MLG027**
3. Number of solutions of  $\log_{(1+x)} \left( \frac{1-x}{1+x} \right) - 2 \log_{(1-x)}(1+x) = 0$  is **MLG028**
4. The minimum possible real  $x$  which satisfy the equation,  $2 \log_2 \log_2 x + \log_{1/2} \log_2 (2\sqrt{2}x) = 1$ . **MLG029**
5. If  $4^A + 9^B = 10^C$ , where  $A = \log_{16} 4, B = \log_3 9$  &  $C = \log_x 83$ , then find  $x$ . **MLG030**

**Exercise – II (JEE-Main PYQs)**

1. The sum of the roots of the equation  $x + 1 - 2 \log_2(3 + 2^x) + 2 \log_4(10 - 2^{-x}) = 0$ , is :  
[JEE Main 2021]  
(1)  $\log_2 14$                       (2)  $\log_2 11$                       (3)  $\log_2 12$                       (4)  $\log_2 13$   
MLG031
2. The number of solutions of the equation  $\log_{(x+1)}(2x^2 + 7x + 5) + \log_{(2x+5)}(x+1)^2 - 4 = 0, x > 0$ ,  
is  
[JEE Main 2021]  
MLG032

Exercise – III (JEE-Advanced Pattern)

SECTION-I

- This section contains **FIFTEEN** questions.
- Each question has **FOUR** options for correct answer(s). **ONE OR MORE THAN ONE** of these four option(s) is (are) correct option(s).
- For each question, choose the correct option(s) to answer the question.
- Answer to each question will be evaluated according to the following marking scheme:  
*Full Marks* : +4 if only (all) the correct option(s) is (are) chosen.  
*Partial Marks* : +3 if all the four options are correct but **ONLY** three options are chosen.  
*Partial Marks* : +2 if three or more options are correct but **ONLY** two options are chosen, both of which are correct options.  
*Partial Marks* : +1 if two or more options are correct but **ONLY** one option is chosen and it is a correct option.  
*Zero Marks* : 0 if none of the options is chosen (i.e. the question is unanswered).  
*Negative Marks* : -2 in all other cases.

**For Example :** If first, third and fourth are the **ONLY** three correct options for a question with second option being an incorrect option; selecting only all the three correct options will result in +4 marks. Selecting only two of the three correct options (e.g. the first and fourth options), without selecting any incorrect option (second option in this case), will result in +2 marks. Selecting only one of the three correct options (either first or third or fourth option), without selecting any incorrect option (second option in this case), will result in +1 marks. Selecting any incorrect option(s) (second option in this case), with or without selection of any correct option(s) will result in -2 marks.

1. If  $\log_a x = b$  for permissible values of  $a$  and  $x$  then identify the statement(s) which can be correct?  
 (A) If  $a$  and  $b$  are two irrational numbers then  $x$  can be rational.  
 (B) If  $a$  rational and  $b$  irrational then  $x$  can be rational.  
 (C) If  $a$  irrational and  $b$  rational then  $x$  can be rational.  
 (D) If  $a$  rational and  $b$  rational then  $x$  can be rational.

MLG033

2. Which of the following statements is(are) correct?  
 (A)  $7^{1/7} > (42)^{1/14} > 1$  (B)  $\log_3(5) \log_7(9) \log_{11}(13) > -2$   
 (C)  $\sqrt{99+70\sqrt{2}} + \sqrt{99-70\sqrt{2}}$  is rational (D)  $\frac{1}{\log_4 3} + \frac{1}{\log_7 3} > 3$

MLG034

3. Let  $N = \frac{\log_2 24}{\log_{96} 2} - \frac{\log_2 192}{\log_{12} 2}$ . Then  $N$  is :  
 (A) a natural number (B) a prime number (C) a rational number (D) an integer

MLG035

4. If  $(\log_{\beta} \alpha)^2 + (\log_{\alpha} \beta)^2 = 79$ , ( $\alpha > 0, \beta > 0, \alpha \neq 1, \beta \neq 1$ ) then value of  $(\log_{\beta} \alpha) + (\log_{\alpha} \beta)$  can be -  
 (A) 7 (B) -9 (C) 9 (D) -7 **MLG036**
5. For  $a > 0, \neq 1$  the roots of the equation  $\log_{ax} a + \log_x a^2 + \log_{a^2x} a^3 = 0$  can be  
 (A)  $a^{-3/4}$  (B)  $a^{-4/3}$  (C)  $a^{-1/2}$  (D) none of these **MLG037**
6. The solution of the equation  $5^{\log_a x} + 5x^{\log_a 5} = 3$ , ( $a > 0, a \neq 1$ ) is  
 (A)  $a^{-\log_5 2}$  (B)  $a^{\log_5 2}$  (C)  $2^{-\log_5 a}$  (D)  $2^{\log_5 a}$  **MLG038**
7. The equation  $x^{(3/4)(\log_2 x)^2 + \log_2 x - 5/4} = \sqrt{2}$  has  
 (A) at least one real solution (B) exactly three real solutions  
 (C) exactly one irrational solution (D) At least one imaginary root **MLG039**
8. The equation  $\log_{x^2} 16 + \log_{2x} 64 = 3$  has :  
 (A) one irrational solution (B) no prime solution  
 (C) two real solutions (D) one integral solution **MLG040**
9. The equation  $x^{[(\log_3 x)^2 - \frac{9}{2} \log_3 x + 5]} = 3\sqrt{3}$  has  
 (A) exactly three real solution (B) at least one real solution  
 (C) exactly one irrational solution (D) At least one imaginary root **MLG041**
10. Let  $a$  and  $b$  be real numbers greater than 1 for which there exists a positive real number  $c$ , different from 1, such that  $2(\log_a c + \log_b c) = 9 \log_{ab} c$ , then the possible value of  $\log_a b$ .  
 (A) 1/2 (B) 3 (C) 1/3 (D) 2 **MLG042**
11. If  $x_1, x_2$  are the value(s) of  $x$  satisfying the equation  $\log_2^2(x-2) + \log_2(x-2)\log_2\left(\frac{3}{x}\right) - 2\log_2^2\left(\frac{3}{x}\right) = 0$ , then  $x_1 + x_2$  is equal to  
 (A)  $x_1 + x_2 = 9$  (B)  $x_1 x_2 = 18$  (C)  $|x_1 - x_2| = 3$  (D)  $x_1^2 + x_2^2 = 45$  **MLG043**
12. The ordered pair  $(x, y)$  satisfying the system of equations  $\log_3 x + \log_3 y = 2 + \log_3 2$  and  $\log_{27}(x + y) = \frac{2}{3}$  is/are :  
 (A) (6, 3) (B) (3, 6) (C) (6, 12) (D) (12, 6) **MLG044**
13. If  $2^{x+y} = 6^y$  and  $3^{x-1} = 2^{y+1}$ , then the value of  $(\log 3 - \log 2)/(x - y)$  is  
 (A) 1 (B)  $\log_2 3 - \log_3 2$  (C)  $\log(3/2)$  (D)  $\log 3 - \log 2$  **MLG045**

14. The inequality  $-1 \leq \left(\frac{1}{3}\right)^x < 2$  is satisfied by

- (A)  $x \in [0, 1]$       (B)  $x > -\log_3 2$       (C)  $x < -\log_3 2$       (D)  $x < -1$

MLG046

15. Which of the following statements are true

- (A)  $\log_2 3 < \log_{12} 10$       (B)  $\log_6 5 < \log_7 8$   
 (C)  $\log_3 26 < \log_2 9$       (D)  $\log_{16} 15 > \log_{10} 11 > \log_7 6$

MLG047

SECTION-II

- This section contains **THREE** paragraphs.
- Based on each paragraph, there are **TWO** questions.
- Each question has **FOUR** options (A), (B), (C) and (D) **ONE or MORE THAN ONE** of these four options is correct.
- For each question, darken the bubble corresponding to the correct option in the ORS.
- For each question, marks will be awarded in one of the following categories :  
*Full Marks* : +3 if only the bubble corresponding to the correct answer is darkened.  
*Zero Marks* : 0 in all other cases.

Comprehension # 1 (Q. No. 16 & 17)

Let  $\log_2 5 = a$  ;  $\log_5 3 = b$

16. The value of  $\log_{50} 30$  is equal to

- (A)  $\frac{b+ab+1}{b+2}$       (B)  $\frac{a+ab+1}{2a+1}$       (C)  $\frac{a+ab+1}{a+2}$       (D)  $\frac{a+ab+b}{2a+1}$

MLG048

17. Roots of the equation  $(\log_{10} 2 \cdot \log_{10} 5)x^2 - (\log_{10} 5 + \log_{10} 15 \cdot \log_{10} 2)x + \log_{10} 15 = 0$  are

- (A)  $a, b$       (B)  $1 + a, 1 + b$       (C)  $a - 1, 1 - b$       (D)  $a + 2; b + 2$

MLG049

Comprehension # 2 (Q. No. 18 & 19)

Let  $\log_5 N = I_1 + f_1$  and  $\log_3 N = I_2 + f_2$ , where  $I_1, I_2$  are integers and  $f_1, f_2 \in [0,1)$ .

Based on above information, answer the following questions :

18. If  $I_1 = 2$  and  $I_2 = 3$ , then maximum integral value of  $N$  is greater than or equal to -

- (A) 79      (B) 80      (C) 81      (D) 82

MLG050

19. If  $I_1 = 3$  and  $I_2 = 4$ , then number of possible integral values of  $N$  is less than or equal to -

- (A) 119      (B) 116      (C) 117      (D) 118

MLG051

**Comprehension # 3 (Q. No. 20 & 21)**

If  $(x_1, y_1)$  and  $(x_2, y_2)$  are the solution of the system of equation.

$$\log_{225}(x) + \log_{64}(y) = 4$$

$$\log_x(225) - \log_y(64) = 1,$$

20. The value of  $\log_{30}(x_1y_1x_2y_2)$  is

MLG052

21. Number of digits in  $(x_1y_1x_2y_2)$  is

MLG053

**SECTION-III**

- This section contains **TWO** questions.
- **Each question has matching lists.** The codes for the lists have choices (A), (B), (C) and (D) out of which **ONLY ONE is correct**
- For each question, marks will be awarded in one of the following categories :  
*Full Marks* : +3 If only correct answer is given.  
*Zero Marks* : 0 If no answer is given.  
*Negative Marks* : -1 For incorrect answer

22. Match List-I with List-II and select the correct answer using the code given below the list.

List-I	List-II
(P) The value of $x$ for which	(1) 2
$2\ln(2^x - 5) = \ln 2 + \ln\left(2^x - \frac{7}{2}\right)$ is	(2) 4
(Q) The sum of the real roots of the equation	(3) 3
$x^{\log_{10}\left(\frac{5x}{2}\right)} = 10^{\log_{10} x}$ is	(4) 5
(R) If $\alpha = 2^{\frac{(\log_3(\log_3 5))}{\log_3 2}}$ and $\beta^\alpha = 9$ , then value	(5) $\frac{1}{2}$
$\frac{1}{5}(\beta^{\alpha^2})$ is equal to	
(S) $\log_{\sqrt{3}}\left(\sqrt{6 + \sqrt{6 + \sqrt{6 + \dots \infty}}}\right)$ is equal to	

The correct option is

- |                                |                                |
|--------------------------------|--------------------------------|
| (A) P → 1; Q → 2; R → 2; S → 5 | (B) P → 3; Q → 4; R → 2; S → 5 |
| (C) P → 1; Q → 2; R → 4; S → 1 | (D) P → 3; Q → 4; R → 4; S → 1 |

MLG054

23. Match List-I with List-II and select the correct answer using the code given below the list.

List-I	List-II
(P) Positive value of $x$ satisfying the equation $(25)^{\frac{2x^2-5x-9}{4}} = (\sqrt{11})^{3\log_{11} 5}$ is	(1) 5
(Q) Sum of values of $x$ which satisfy the equation $\sqrt{ x-4 ^{x-2}} = \sqrt[4]{ x-4 ^{x+2}}$ is	(2) 12
(R) The expression $\sqrt{\log_{0.5}^2 32}$ has the value equal to	(3) 4
(S) The value of $3k$ , where $\log(\log 9) + \log(\log 49) = \log k + \log(\log 3) + \log(\log 7)$ , is	(4) 18
(A) $P \rightarrow 3; Q \rightarrow 4; R \rightarrow 1; S \rightarrow 2$	(B) $P \rightarrow 1; Q \rightarrow 4; R \rightarrow 3; S \rightarrow 2$
(C) $P \rightarrow 2; Q \rightarrow 4; R \rightarrow 3; S \rightarrow 1$	(D) $P \rightarrow 3; Q \rightarrow 1; R \rightarrow 2; S \rightarrow 4$

MLG055

**SECTION-IV**

- This section contains **ONE** question.
- Each question contains two columns, Column-I and Column-II.
- Column-I has four entries (A), (B), (C) and (D).
- Column-II has four entries (p), (q), (r), (s).
- Match the entries in Column-I with the entries in Column-II.
- For each question, marks will be awarded in one of the following categories:

Full Marks	: +4	If only correct answer is given.
Zero Marks	: 0	If no answer is given.
Negative Marks	: -1	For incorrect answer

24. Column-I	Column-II
(A) Anti-logarithm of $(0.\bar{6})$ to the base 27 has the value equal to	(p) 5
(B) Characteristic of the logarithm of 2008 to the base 2 is	
(C) The value of $b$ satisfying the equation, $\log_e 2 \cdot \log_b 625 = \log_{10} 16 \cdot \log_e 10$ is	(q) 7
(D) Number of noughts after decimal before a significant figure comes in the number $\left(\frac{5}{6}\right)^{100}$ , is	(r) 9 (s) 10
(Given $\log_{10} 2 = 0.3010$ and $\log_{10} 3 = 0.4771$ )	

MLG056

Exercise - IV (JEE-Advanced PYQs)

1. Number of solutions of  $\log_4(x - 1) = \log_2(x - 3)$  is  
 (A) 3 (B) 1 (C) 2 (D) 0  
 [JEE 2001 (Screening)]  
 MLG057
  
2. Let  $(x_0, y_0)$  be the solution of the following equations  
 $(2x)^{\ln 2} = (3y)^{\ln 3}$   
 $3^{\ln x} = 2^{\ln y}$   
 Then  $x_0$  is  
 (A)  $\frac{1}{6}$  (B)  $\frac{1}{3}$  (C)  $\frac{1}{2}$  (D) 6  
 [JEE 2011]  
 MLG058
  
3. The value of  $6 + \log_{\frac{3}{2}} \left( \frac{1}{3\sqrt{2}} \sqrt{4 - \frac{1}{3\sqrt{2}}} \sqrt{4 - \frac{1}{3\sqrt{2}}} \sqrt{4 - \frac{1}{3\sqrt{2}}} \dots \right)$  is  
 [JEE 2012]  
 MLG059
  
4. If  $3^x = 4^{x-1}$ , then  $x =$   
 (A)  $\frac{2\log_3 2}{2\log_3 2 - 1}$  (B)  $\frac{2}{2 - \log_2 3}$  (C)  $\frac{1}{1 - \log_4 3}$  (D)  $\frac{2\log_2 3}{2\log_2 3 - 1}$   
 [JEE Advanced 2013]  
 MLG060
  
5. The value of  $((\log_2 9)^2)^{\frac{1}{\log_2(\log_2 9)}} \times (\sqrt{7})^{\frac{1}{\log_4 7}}$  is \_\_\_\_\_  
 [JEE Advanced 2018]  
 MLG061
  
6. The product of all positive real values of  $x$  satisfying the equation  $x^{(16(\log_5 x)^3 - 68\log_5 x)} = 5^{-16}$  is \_\_\_\_\_.  
 [JEE Advanced 2022]  
 MLG062

**ANSWER KEY**

**Exercise - I (JEE - Main Pattern)**

Section-A	Q.	1	2	3	4	5	6	7	8	9	10
	A.	1	1	3	2	1	4	2	3	1	2
	Q.	11	12	13	14	15	16	17	18	19	20
	A.	4	3	3	4	1	1	2	4	4	1
	Q.	21	22	23	24	25					
	A.	3	2	1	1	3					
Section-B	Q.	1	2	3	4	5					
	A.	12	6	0	8.00	10.00					

**Exercise - II (JEE - Main PYQs)**

Question	1	2	
Answer	2	1	

**Exercise - III (JEE - Advanced Pattern)**

Section-I	Q.	1	2	3	4	5	6	7	8	9	10
	A.	A,B,C,D	A,B,D	A,B,C,D	B,C	B,C	A,C	A,B,C	A,B,C,D	A,B,C	A,D
	Q.	11	12	13	14	15					
	A.	A,B,C,D	A,B	C,D	A,B	B,C					
Section-II	Q.	16	17	18	19	20	21				
	A.	B	B	A,B	A,D	12.00	18.00				
Section-III	Q.	22	23								
	A.	D	A								
Section-IV	Q.	24									
	A.	(A → r; B → s; C → p; D → q)									

**Exercise - IV (JEE - Advanced PYQs)**

Question	1	2	3	4	5	6	
Answer	B	C	4.00	A,B,C	8.00	1.00	