JEE Main 2026 April 4 Shift 2

Question Paper

Conducted by National Testing Agency (NTA)

General Instructions

(i) **Duration:** The total duration of the examination is 3 hours (180 minutes).

(ii) **Total Marks:** The complete paper carries a maximum of 300 marks.

(iii) **Structure:** The paper has 3 part and each consists of two sections:

- **Section A:** 20 Multiple Choice Questions (MCQs).
- **Section B:** 5 Numerical Value Type Questions.

(iv) **Compulsory Questions:** All 25 questions are compulsory.

(v) Each question has four options. Only **one** option is correct.

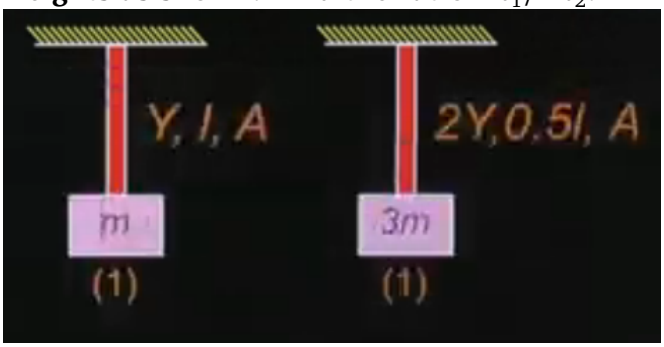
(vi) **Right Answer:** +4 marks.

(vii) **Incorrect Answer:** −1 mark (Negative marking).

(viii) **Unanswered/Marked for Review:** 0 marks.

Physics

1. Two strings with lengths l_1 and l_2, and Young's moduli Y_1 and Y_2 are elongated under two weights as shown. Find the ratio $\Delta l_1/\Delta l_2$.



Case (1): String has Young's modulus Y, length l, cross–sectional area A and a mass m is attached.

Case (2): String has Young's modulus $2Y$, length $0.5l$, cross–sectional area A and a mass $3m$ is attached.

(A) 3

(B) $\frac{2}{3}$

(C) $\frac{4}{3}$

(D) $\frac{1}{3}$

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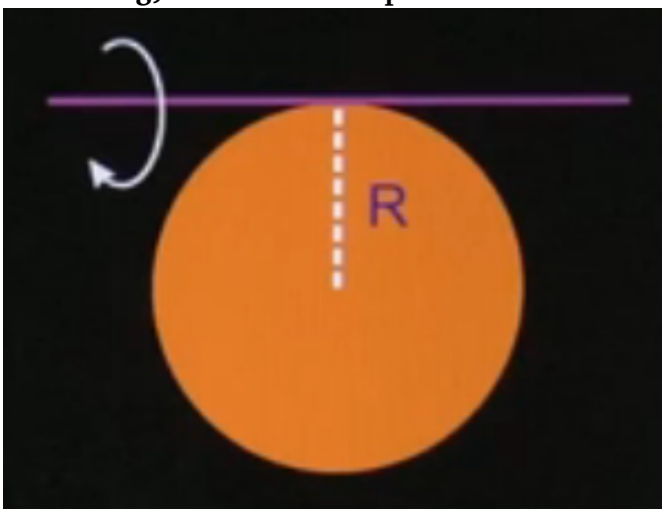
2. Consider a ring of radius R which rotates about a horizontal axis as shown (axis is tangent to the ring). Find the time period of small oscillations.



(A) $2\pi\sqrt{\frac{5R}{g}}$

(B) $2\pi\sqrt{\frac{R}{2g}}$

(C) $2\pi\sqrt{\frac{3R}{2g}}$

(D) $2\pi\sqrt{\frac{R}{g}}$

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3. Two cars A and B are moving on a road with speeds $100\,\text{km/h}$ and $80\,\text{km/h}$ respectively. A stone is thrown from car B with speed V km/h relative to it. The stone hits car A with speed $5\,\text{m/s}$ relative to car A (ignore gravity). Find V.

(A) 18

(B) 38

(C) 48

(D) 20

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4. List-I presents some physical quantities and List-II presents their dimensions. Match the two lists appropriately.

	List-I		List-II
(A)	f = work function	(1)	$ML^2T^{-3}I^{-1}$
(B)	v_s = stopping potential	(2)	$M^0L^0T^{-1}$
(C)	h = Plank's constant	(3)	ML^2T^{-2}
(D)	f = frequency	(4)	ML^2T^{-1}

(A) A→(3); B→(4); C→(2); D→(1)

(B) A→(3); B→(1); C→(4); D→(2)

(C) A→(2); B→(3); C→(4); D→(1)

(D) A→(4); B→(3); C→(1); D→(2)

Chemistry

1. Match the list-I with list-II

	List-I (Name)		List-II (Reagent used)
(I)	Tollen's reagent	(P)	Cu^{2+}/OH^-
(II)	Fehling's reagent	(Q)	$[Ag(NH_3)_2]^+OH^-$
(III)	Williamson method	(R)	dil. $KMnO_4$
(IV)	Bayer's reagent	(S)	R-X + RO^- Na

(A) (I)-(Q), (II)-(S), (III)-(R), (IV)-(R)

(B) (I)-(P), (II)-(S), (III)-(R), (IV)-(R)

(C) (I)-(Q), (II)-(S), (III)-(P), (IV)-(R)

(D) (I)-(P), (II)-(S), (III)-(P), (IV)-(S)

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2. Manganese forms oxide and fluoride with highest oxidation state. The difference in the highest oxidation state of Mn in the oxide and fluoride is:

(A) 1

(B) 2

(C) 3

(D) 4

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3. Two atoms are bonding along the Z-axis. How will the π^* orbital look like: (Z is inter-nuclear axis)

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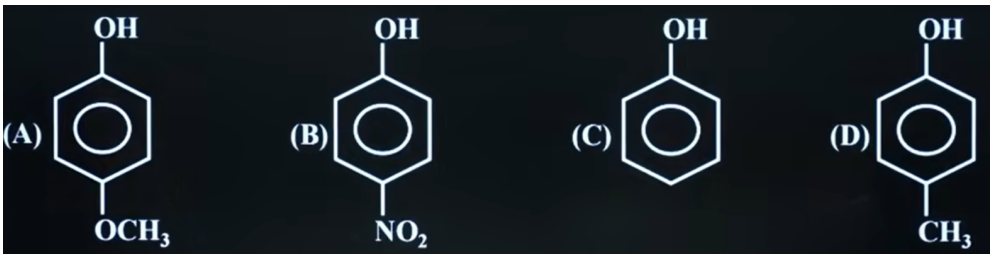
4. Which of the following is most acidic?



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5. "X" is an oxoanion of the lightest element of group 7 (in the periodic table). The metal is in +6 oxidation state in "X". The color of the potassium salt of X is

(A) purple

(B) orange

(C) yellow

(D) green

Mathematics

1. Evaluate

$$(0.2)^{\log_{\sqrt{5}}\alpha} + (0.04)^{\log_5\beta}$$

if

$$\alpha = \frac{1}{4} + \frac{1}{8} + \frac{1}{16} + \cdots$$

$$\beta = \frac{1}{3} + \frac{1}{9} + \frac{1}{27} + \cdots$$

(A) 4

(B) 8

(C) 12

(D) 10

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2. The number of non-negative integer solutions of the equation

$$a + b + 2c = 22$$

is:

(A) 124

(B) 144

(C) 135

(D) 136

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3. If the quadratic expression

$$(\lambda + 2)x^2 - 3\lambda x + 4\lambda = 0, \qquad \lambda \neq -2$$

has two positive roots, then the number of possible integral values of λ is:

(A) 2

(B) 4

(C) 1

(D) 3

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4. In the expansion of

$$\left(9x - \frac{1}{3\sqrt{x}}\right)^{18},$$

if the coefficient of the term independent of x is $221k$, then the value of k is:

(A) 82

(B) 83

(C) 84

(D) 86

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5. If

$$(2\alpha + 1,\ \alpha^2 - 3\alpha,\ \frac{\alpha - 1}{2})$$

is the image of the point

$$(\alpha,\ 2\alpha,\ 1)$$

in the line

$$\frac{x-2}{3} = \frac{y-1}{2} = \frac{z}{1},$$

then find the possible values of α.
