

Jharkhand Polytechnic 2026

Question Paper (Memory-Based)

Conducted by JCECEB



General Instructions

- (i) Jharkhand Polytechnic 2026 consists of 150 questions for 150 marks to be attempted in 150 minutes.
- (ii) Jharkhand Polytechnic question paper is divided into 3 sections- Physics, Chemistry and Mathematics.
- (iii) Each Section Contains 50 questions.
- (iv) Each question carries 1 mark and there is negative marking of 0.25 for incorrect answers.

1. From the following phenomenon, which one cannot be explained by assuming light always travels in straight line ?

- (A) Refraction
- (B) Reflection
- (C) Diffraction
- (D) Transmission

2. The discoverer of the nucleus of an atom is

- (A) Goldstein
- (B) Rutherford
- (C) Thomson
- (D) Chadwick

3. Kirchhoff current law is based on the conservation of

- (A) None of these
- (B) Charge

- (C) Mass
 - (D) Momentum
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4. A moving electron produces-

- (A) Electric field only
 - (B) Magnetic field only
 - (C) Both electric and magnetic field
 - (D) None of these
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5. What type of mirror is used to get virtual and erect image always ?

- (A) Plane mirror
 - (B) Convex mirror
 - (C) Concave mirror
 - (D) Both A) and B)
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6. How power of the lens is related to focal length of the lens ?

- (A) Directly proportional to f
 - (B) Directly proportional to $\frac{1}{f}$
 - (C) Directly proportional to $\sqrt{f}$
 - (D) Directly proportional to $\frac{1}{f^2}$
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7. If $x = a \tan \theta$ and $y = b \sec \theta$, then $\frac{y^2}{b^2} - \frac{x^2}{a^2} =$

- (A) -1
 - (B) $\sin \theta$
 - (C) 1
 - (D) None of these
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8. The decimal expansion of $\frac{141}{120}$ will terminate after how many places of decimals ?

- (A) 3
 - (B) 4
 - (C) 1
 - (D) 2
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9. If A(1, 3), B(−1, 4), C(2, 5) and D(x, 4) are the vertices of parallelogram ABCD, then the value of x is

- (A) 3
(B) 3/2
(C) 0
(D) 4
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10. The simplest form of $\sec^2 \theta - \frac{1}{\operatorname{cosec}^2 \theta - 1}$ is

- (A) $\sec \theta$
(B) $\operatorname{cosec} \theta$
(C) 0
(D) 1
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11. The radii of the circular ends of a bucket of height 15 cm are 14 cm and r cm ($r < 14$ cm). If the volume of bucket is 5390 cm^3 , then find the value of r . [Use $\pi = \frac{22}{7}$]

- (A) 6 cm
(B) 7 cm
(C) 13 cm
(D) 8 cm
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12. If the mean of the following frequency distribution is 65.6, then find the missing frequencies (f_1, f_2).

Class	Frequency
10 – 30	5
30 – 50	8
50 – 70	f_1
70 – 90	20
90 – 110	f_2
110 – 130	2
Total	50

- (A) $(f_1, f_2) = (11, 4)$
 - (B) $(f_1, f_2) = (12, 3)$
 - (C) $(f_1, f_2) = (9, 6)$
 - (D) $(f_1, f_2) = (10, 5)$
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13. If the distance between the points $(x, -1)$ and $(3, 2)$ is 5, then the value of x is

- (A) 7, -1
 - (B) -7, 1
 - (C) -7, -1
 - (D) 7, 1
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14. The graph of the linear equations $3x + y = 7$ and $6x + 2y = 8$ represents two lines, which are

- (A) Coincident
 - (B) Parallel
 - (C) Intersecting exactly at the point
 - (D) Perpendicular to each other
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15. A letter of English alphabets is chosen at random. What is the probability that it is a letter of the word 'MATHEMATICS' ?

- (A) $\frac{4}{13}$
 - (B) $\frac{9}{26}$
 - (C) $\frac{5}{13}$
 - (D) $\frac{11}{26}$
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16. The sum of first 20 odd natural numbers is

- (A) -400
 - (B) 300
 - (C) 270
 - (D) 400
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17. The ratio of carbon and oxygen in CO₂ is:

- (A) 1:1
 - (B) 1:2
 - (C) 2:1
 - (D) 2:2
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18. The formula of ammonia is:

- (A) NH₃
 - (B) NO₂
 - (C) N₂O
 - (D) NH₄
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19. Which of the following is a chemical change?

- (A) Melting of ice
 - (B) Boiling of water
 - (C) Burning of paper
 - (D) Dissolving of salt
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20. Which of the following is a noble gas?

- (A) Hydrogen
 - (B) Nitrogen
 - (C) Neon
 - (D) Chlorine
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21. The lightest metal is:

- (A) Sodium
 - (B) Lithium
 - (C) Calcium
 - (D) Aluminum
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