

AP EAPCET 2026 May 14 Shift 1

Question Paper (Memory-Based)

Conducted by JNTU, Kakinada



General Instructions

- (i) The test is of 3 hours duration.
- (ii) This test paper consists of 160 questions. The maximum marks are 160.
- (iii) Physics and Chemistry contains 40 questions each and Mathematics contains 80 questions.
- (iv) Each question carries +1 marks for correct answer and there is no negative marking for wrong answer.

1. If the system of equations $2x + py + 6z = 8$, $x + 2y + qz = 5$ and $x + y + 3z = 4$ has infinitely many solutions, then $p =$

- (A) -1
- (B) 2
- (C) 3
- (D) -3

2. If the system of simultaneous linear equations $x + \lambda y - 2z = 1$, $x - y + \lambda z = 2$ and $x - 2y + 3z = 3$ is inconsistent for $\lambda = \lambda_1$ and λ_2 , then $\lambda_1 + \lambda_2 =$

- (A) 5
- (B) $\sqrt{5}$
- (C) 1
- (D) -1

3. If $[]$ denotes the greatest integer function, then $\int_1^2 [x^2] dx =$

- (A) $5 + \sqrt{2} + \sqrt{3}$
 - (B) $5 + \sqrt{2} - \sqrt{3}$
 - (C) $5 - \sqrt{2} - \sqrt{3}$
 - (D) $5 - \sqrt{2} + \sqrt{3}$
-

4. The value of the integral $\int_0^4 ||x - 2| - x| dx =$

- (A) 2
 - (B) 3
 - (C) 6
 - (D) 12
-

5. The value of the integral $\int_0^2 x^2(2 - x)^5 dx$ is:

- (A) $\frac{128}{21}$
 - (B) $\frac{64}{7}$
 - (C) $\frac{32}{21}$
 - (D) $\frac{16}{7}$
-

6. Pressure of 2×10^6 Pa causes volume decrease of 0.1% in a material. Bulk modulus is:

- (A) 2×10^9 Pa
 - (B) 2×10^{10} Pa
 - (C) 1×10^{10} Pa
 - (D) 5×10^9 Pa
-

7. A wire extends by 1 mm under 100 N. Extension under 300 N is:

- (A) 1 mm
 - (B) 2 mm
 - (C) 3 mm
 - (D) 4 mm
-

8. Water flows in a horizontal pipe. At a point where speed is 2 m/s, pressure is 2000 Pa. At another point, speed becomes 4 m/s. Find pressure at second point. (Density = 1000 kg/m³)

- (A) 8000 Pa
 - (B) 14000 Pa
 - (C) 2000 Pa
 - (D) -4000 Pa
-

9. A pipe has cross-sectional areas 4 cm² and 1 cm². If velocity in the wider section is 2 m/s, velocity in the narrower section is:

- (A) 2 m/s
 - (B) 4 m/s
 - (C) 8 m/s
 - (D) 16 m/s
-

10. A soap bubble of radius 1 cm has surface tension 0.03 N/m. Excess pressure inside is:

- (A) 3 Pa
 - (B) 6 Pa
 - (C) 12 Pa
 - (D) 24 Pa
-

11. An organic compound has the empirical formula CH₂O. Its vapour density is 45. The molecular formula of compound is

- (A) CH₂O
 - (B) C₂H₅O
 - (C) C₂H₄O₂
 - (D) C₃H₆O₃
-

12. At 273 K the maximum work done when pressure on 10g of hydrogen is reduced from 10atm to 1 atm under isothermal, reversible conditions is

- (A) -52.18kj
 - (B) +26.09kj
 - (C) -26.09kj
 - (D) +52.18kj
-

13. For the reaction $N_2 + 3H_2 \rightarrow 2NH_3$, $\Delta H = ?$

- (A) $\Delta E + 2RT$
 - (B) $\Delta E - 2RT$
 - (C) $\Delta H = RT$
 - (D) $\Delta E - RT$
-

14. For which of the following process entropy change (ΔS) is negative ?

- I) Sublimation of dry ice
 - II) Freezing of water
 - III) Crystallisation of the dissolved substance
 - IV) Burning of rocket fuel
- (A) I, II only
 - (B) II, III only
 - (C) III, IV only
 - (D) I, IV only
-

15. The signs of ΔH and Δs for a reaction to be spontaneous at all temperatures respectively are

- (A) Positive , positive
 - (B) Positive , negative
 - (C) Negative , negative
 - (D) Negative , positive
-