

COMEDK UGET 2026 May 9 Shift 1



Question Paper (Memory-Based)

Conducted by Consortium of Medical, Engineering and Dental Colleges of Karnataka)

General Instructions

- (i) The test is of 3 hours duration.
- (ii) This test paper consists of 180 questions. The maximum marks are 180.
- (iii) Physics and Chemistry and Mathematics each contain 60 questions.
- (iv) Each question carries +1 marks for correct answer and there is no negative marking for wrong answer.

1. The number of relations, defined on the set $\{a, b, c, d\}$, which are both reflexive and symmetric, is equal to:

- (A) 256
- (B) 16
- (C) 1024
- (D) 64

2. How many 4-digit numbers that are divisible by 4 can be formed using the digits 1, 2, 3 and 4 (repetition of digits is not allowed)?

- (A) 3
- (B) 6
- (C) 9
- (D) 12

3. The standard deviation of 100 observations is 10. If 20 is added to each observation, then

what will be the new standard deviation?

- (A) 10
 - (B) 15
 - (C) 20
 - (D) 25
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4. The radius of the base of a cone is increasing at the rate of 3 cm/minute and the altitude is decreasing at the rate of 4 cm / minute. The rate of change of lateral surface when the radius = 7 cm and altitude = 24 cm, is

- (A) $54\pi \text{ cm}^2/\text{min}$
 - (B) $7\pi \text{ cm}^2/\text{min}$
 - (C) $27\pi \text{ cm}^2/\text{min}$
 - (D) None of these
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5. The whole area surrounded by the curve with the equations $x = a \cos^3 t, y = b \sin^3 t$ is:

- (A) $\frac{3}{4}\pi ab$
 - (B) $\frac{3}{8}\pi ab$
 - (C) $\frac{3}{8}\pi a^2 b$
 - (D) $\frac{3}{8}ab$
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6. Which of the following is incorrect about charges ?

- (A) Static charges are produced by rubbing
 - (B) An electroscope can detect whether a body is charged or not
 - (C) Like charges repel each other
 - (D) A glass rod becomes negative charged when it is rubbed with silk
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7. The volume of a small ball is calculated to be 25 cm^3 and it weighs 30 g in air. Will this ball float or sink in water?

- (A) Sink
 - (B) Partially sink
 - (C) Float
 - (D) Can not be predicted from the given information
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8. A toy car is moving in a straight line at a speed of 6 cm/s and comes to rest after a minute. How far has it traveled?

- (A) 600 cm
 - (B) 60 m
 - (C) 360 cm
 - (D) 360 m
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9. If two thin lenses with focal lengths of +10 cm and +20 cm are placed in contact, what is the total power of the combination?

- (A) 10 D
 - (B) 5 D
 - (C) 15 D
 - (D) 30 D
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10. The magnetic field around a current-carrying solenoid is similar to the magnetic field of a:

- (A) Compass needle
 - (B) Permanent magnet
 - (C) Electromagnet
 - (D) Bar magnet
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11. Which of the following is not a property of a thermodynamic system?

- (A) Internal energy

- (B) Heat
 - (C) Pressure
 - (D) Temperature
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12. Which of the following has zero dipole moment ?

- (A) NH_3
 - (B) NF_3
 - (C) BF_3
 - (D) None of these
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13. How many degrees of freedom are there at the triple point in a one-component system?

- (A) 0
 - (B) 1
 - (C) 2
 - (D) 3
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14. Which of the following gives a Silver mirror test positively with Tollen's reagent?

- (A) $\text{CH}_3\text{CH}_2\text{OH}$
 - (B) CH_3CHO
 - (C) CH_3COOH
 - (D) $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$
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15. The maximum energy of photoelectron depends on _____.

- (A) Threshold frequency of the metal
 - (B) Photoelectric work function of the metal
 - (C) Wavelength of the incident radiation
 - (D) All of these
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