GATE - CE - 2019 - 1 - 13

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1) The lecture was attended by quite .....students, so the hall was not very ..... (CE 2019)

a) a few, quite b) few, quiet c) a few, quiet d) few, quite

2) They have come a long way in .....trust among the users. (CE 2019)

a) creating b) created c) creation d) create

3) On a horizontal ground, the base of a straight ladder is 6m away from the base of a vertical pole. The ladder makes an angle of 45° to the horizontal. If the ladder is resting at a point located at one-fifth of the height of the pole from the bottom, the height of the pole is ...meters. (CE 2019)

a) 15 b) 25 c) 30 d) 35

4) If $E = 10$, $J = 20$, $O = 30$, and $T = 40$, what will be $P + E + S + T$? (CE 2019)

a) 51 b) 82 c) 120 d) 164

5) The CEO's decision to quit was as shocking to the Board as it was to ..... (CE 2019)

a) I b) me c) my d) myself

6) The new cotton technology, Bollgard-II, with herbicide tolerant traits has developed into a thriving business in India. However, the commercial use of this technology is not legal in India. Notwithstanding that, reports indicate that the herbicide tolerant Bt cotton had been purchased by farmers at an average of Rs 200 more than the control price of ordinary cotton, and planted in 15% of the cotton growing area in the 2017 Kharif season.
Which one of the following statements can be inferred from the given passage? (CE 2019)

a) Farmers want to access the new technology if India benefits from it
b) Farmers want to access the new technology even if it is not legal
c) Farmers want to access the new technology for experimental purposes
d) Farmers want to access the new technology by paying high price

7) In a sports academy of 300 people, 105 play only cricket, 70 play only hockey, 50 play only football, 25 play both cricket and hockey, 15 play both hockey and football and 30 play both cricket and football. The rest of them play all three sports. What is the percentage of people who play at least two sports? (CE 2019)

a) 23.30 b) 25.00 c) 28.00 d) 50.00

8) "The increasing interest in tribal characters might be a mere coincidence, but the timing is of interest. None of this, though, is to say that the tribal hero has arrived in Hindi cinema, or that the new crop of characters represents the acceptance of the tribal character in the industry. The films and characters are too few to be described as a pattern."
What does the word 'arrived' mean in the paragraph above? (CE 2019)

a) reached a terminus
b) came to a conclusion
c) attained a status
d) went to a place

9) A square has sides $5cm$ smaller than the sides of a second square. The area of the larger square is four times the area of the smaller square. The side of the larger square is ..... cm. (CE 2019)

a) 18.50 b) 15.10 c) 10.00 d) 8.50

10) P, Q, R, S and T are related and belong to the same family. P is the brother of S. Q is the wife of P. R and T are the children of the siblings P and S respectively. Which one of the following statements is necessarily FALSE? (CE 2019)

a) S is the aunt of R
b) S is the aunt of T
c) S is the sister-in-law of Q
d) S is the brother of P

11) Which one of the following is correct? (CE 2019)

a) $\lim_{x\to 0} \frac{\sin 4x}{\sin 2x} = 2$ and $\lim_{x\to 0} \frac{\tan x}{x} = 1$
b) $\lim_{x\to 0} \frac{\sin 4x}{\sin 2x} = 1$ and $\lim_{x\to 0} \frac{\tan x}{x} = 1$
c) $\lim_{x\to 0} \frac{\sin 4x}{\sin 2x} = \infty$ and $\lim_{x\to 0} \frac{\tan x}{x} = 1$
d) $\lim_{x\to 0} \frac{\sin 4x}{\sin 2x} = 2$ and $\lim_{x\to 0} \frac{\tan x}{x} = \infty$

12) Consider a two-dimensional flow through isotropic soil along x direction and z direction. If h is the hydraulic head, the Laplace's equation of continuity is expressed as (CE 2019)

a) $\frac{\partial h}{\partial x} + \frac{\partial h}{\partial z} = 0$ b) $\frac{\partial h}{\partial x} + \frac{\partial h}{\partial z} + \frac{\partial h}{\partial z} = 0$ c) $\frac{\partial^2 h}{\partial x^2} + \frac{\partial^2 h}{\partial z} = 0$ d) $\frac{\partial^2 h}{\partial x^2} + \frac{\partial^2 h}{\partial z^2} = 0$

13) A simple mass-spring oscillatory system consists of a mass m, suspended from a spring of stiffness k. Considering z as the displacement of the system at any time t, the equation of motion for the free vibration of the system is $m\ddot{z} + kz = 0$. The natural frequency of the system is (CE 2019)

a) $\frac{k}{m}$ b) $\sqrt{\frac{k}{m}}$ c) $\frac{m}{k}$ d) $\sqrt{\frac{m}{k}}$