1) innovative 2) simple 3) dull 4) boring

GATE ASSIGNMENT 4

EE1030 : Matrix Theory
Indian Institute of Technology Hyderabad

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2018 CE 53 to 65

1) Q.1 Writing too many things on the _____ while teaching could make the students get _____.

a) bored / board b) board / bored c) board / board d) bored / bored

2) Which one of the following is a representation (not to scale and in bold) of all values of x satisfying the inequality $2 - 5x \leq -\frac{6x-5}{3}$ on the real number line?

a) shone, shown
b) shone, shone
c) shown, shone
d) shown, shown

3) "Although it does contain some pioneering ideas, one would hardly characterize the work as _____." The word that best fills the blank in the above sentence is

a) innovative b) simple c) dull d) boring

4) $\underbrace{a+a+a+\cdots+a}_{n \text{ times}} = a^2b$ and $\underbrace{b+b+b+\cdots+b}_{m \text{ times}} = ab^2$, where a, b, n and m are natural numbers. What is the value of $(\underbrace{m+m+m+\cdots+m}_{n \text{ times}})(\underbrace{n+n+n+\cdots+n}_{m \text{ times}})$?

a) $2a^2b^2$ b) a^4b^4 c) $ab(a+b)$ d) a^2+b^2

5) A three-member committee has to be formed from a group of 9 people. How many such distinct committees can be formed?

a) 27 b) 72 c) 81 d) 84

6) For non-negative integers a, b, c, what would be the value of $a+b+c$ if $\log a + \log b + \log c = 0$?

a) 3 b) 1 c) 0 d) −1

Q. 6 – Q. 10 carry two marks each

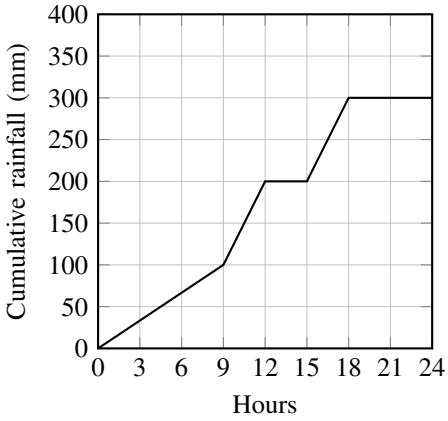
7) In manufacturing industries, loss is usually taken to be proportional to the square of the deviation from a target. If the loss is Rs. 4900 for a deviation of 7 units, what would be the loss in Rupees for a deviation of 4 units from the target?

a) 400 b) 1200 c) 1600 d) 2800

8) A faulty wall clock is known to gain 15 minutes every 24 hours. It is synchronized to the correct time at 9 AM on 11th July. What will be the correct time to the nearest minute when the clock shows 2 PM on 15th July of the same year?

a) 12:45 PM b) 12:58 PM c) 1:00 PM d) 2:00 PM

9) The annual average rainfall in a tropical city is 1000 mm. On a particular rainy day (24-hour period), the cumulative rainfall experienced by the city is shown in the graph. Over the 24-hour period, 50% of the rainfall falling on a rooftop, which had an obstruction-free area of 50 m^2, was harvested into a tank. What is the total volume of water collected in the tank in liters?

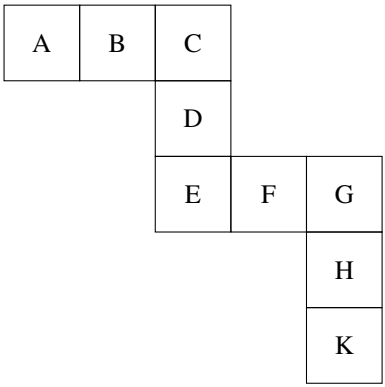


a) 25,000 b) 18,750 c) 7,500 d) 3,125

10) Given that $\frac{\log P}{y-z} = \frac{\log Q}{z-x} = \frac{\log R}{x-y} = 10$ for $x \neq y \neq z$, what is the value of the product PQR?

a) (A) 0 b) (B) 1 c) (C) xyz d) (D) 10^{xyz}

11) Each of the letters in the figure below represents a unique integer from 1 to 9. The letters are positioned in the figure such that each of $(A+B+C)$, $(C+D+E)$, $(E+F+G)$ and $(G+H+K)$ is equal to 13. Which integer does E represent?



a) 1 b) 4 c) 6 d) 7