

MA - 2018

AI24BTECH11015 - Harshvardhan Patidar

Q.1 - Q.5 CARRY ONE MARK EACH

- 1) "The dress _____ her so well that they all immediately _____ her on her appearance."

The words that best fill the blanks in the above sentence are

- a) complemented, complemented
 - b) complimented, complemented
 - c) complimented, complimented
 - d) complemented, complimented
- 2) "The judge's standing in the legal community, though shaken by false allegations of wrongdoing, remained _____."

The word that best fills the blank in the above sentence is

- a) undiminished
 - b) damaged
 - c) illegal
 - d) uncertain
- 3) Find the missing group of letters in the following series:
BC, FGH, LMNO, _____
- a) UVWXY
 - b) TUVWX
 - c) STUVW
 - d) RSTUV
- 4) The perimeters of a circle, a square and an equilateral triangle are equal. Which one of the following statements is true?
- a) The circle has the largest area.
 - b) The square has the largest area.
 - c) The equilateral triangle has the largest area.
 - d) All the three shapes have the same area.
- 5) The value of the expression $\frac{1}{1+\log_u vw} + \frac{1}{1+\log_v wu} + \frac{1}{1+\log_w uv}$ is _____.
- a) -1
 - b) 0
 - c) 1
 - d) 3

Q.6 - Q.10 CARRY TWO MARKS EACH.

- 6) Forty students watched films A, B and C over a week. Each student watched either only one film or all three. Thirteen students watched film A, sixteen students watched film B and nineteen students watched film C. How many students watched all three films?
- 0
 - 2
 - 4
 - 8
- 7) A wire would enclose an area of $1936m^2$, if it is bent into a square. The wire is cut into two pieces. The longer piece is thrice as long as the shorter piece. The long and the short pieces are bent into a square and a circle, respectively. Which of the following choices is closest to the sum of the areas enclosed by the two pieces in square meters?
- 1096
 - 1111
 - 1243
 - 2486
- 8) A contract is to be completed in 52 days and 125 identical robots were employed, each operational for 7 hours a day. After 39 days, five-seventh of the work was completed. How many additional robots would be required to complete the work on time, if each robot is now operational for 8 hours a day?
- 50
 - 89
 - 146
 - 175
- 9) A house has a number which needs to be identified. The following three statements are given that can help in identifying the house number.
- If the house number is a multiple of 3, then it is a number from 50 to 59.
 - If the house number is NOT a multiple of 4, then it is a number from 60 to 69.
 - If the house number is NOT a multiple of 6, then it is a number from 70 to 79.
- What is the house number?
- 54
 - 65
 - 66
 - 76
- 10) An unbiased coin is tossed six times in a row and four different such trials are conducted. One trial implies six tosses of the coin. If H stands for head and T stands for tail, the following are the observations from the four trials:
(1) HTHTHT (2) TTHHHT (3) HTTHHT (4) HHHT__.

Which statement describing the last two coin tosses of the fourth trial has the highest probability of being correct?

- a) Two T will occur.
- b) One H and one T will occur.
- c) Two H will occur.
- d) One H will be followed by one T.

Q.11 - Q.25 CARRY ONE MARK EACH

- 11) The principal value of $(-1)^{(-2i/\pi)}$ is
- a) e^2
 - b) e^{2i}
 - c) e^{-2i}
 - d) e^{-2}
- 12) Let $f : \mathbb{C} \rightarrow \mathbb{C}$ be an entire function with $f(0) = 1$, $f(1) = 2$ and $f'(0) = 0$. If there exists $M > 0$ such that $|f''(z)| \leq M$ for all $z \in \mathbb{C}$, then $f(2) =$
- a) 2
 - b) 5
 - c) $2 + 5i$
 - d) $5 + 2i$
- 13) In the Laurent series expansion of $f(z) = \frac{1}{z(z-1)}$ valid for $|z-1| > 1$, the coefficient of $\frac{1}{z-1}$ is
- a) -2
 - b) -1
 - c) 0
 - d) 1