# GateAssignment3

## EE24BTECH11048-NITHIN.K

## 1 GENERAL APTITUDE (GA) QUESTIONS(COMPULSARY)

1) One of the parts (A, B, C, D) in the sentence given below contains an ERROR. Which one of the following is INCORRECT?
   **I requested that he should be given the driving test today instead of tomorrow.**
   a) requested that
   b) should be given
   c) the driving test
   d) instead of tomorrow

2) Which one of the following options is the closest in meaning to the word given below?
   **Latitude**
   a) Eligibility
   b) Freedom
   c) Coercion
   d) Meticulousness

3) Choose the most appropriate word from the options given below to complete the following sentence:
   **Given the seriousness of the situation that he had to face, his _____ was impressive.**
   a) beggary
   b) nomenclature
   c) jealousy
   d) nonchalance

4) Choose the most appropriate alternative from the options given below to complete the following sentence:
   **If the tired soldier wanted to lie down, he _____ the mattress out on the balcony.**
   a) should take
   b) shall take
   c) should have taken
   d) will have taken

5) If $(1.001)^1 259 = 3.52$ and $(1.001)^2 062 = 7.85$, then $(1.001)^3 321 =$
   a) 2.23
   b) 4.33
   c) 11.37
   d) 27.64

6) A and B are friends. They decide to meet between 1 PM and 2 PM on a given day. There is a condition that whoever arrives first will not wait for the other for more than 15 minutes. The probability that they will meet on that day is

   a) $\frac{1}{4}$
   b) $\frac{1}{16}$
   c) $\frac{7}{16}$
   d) $\frac{9}{16}$

7) The data given in the following table summarizes the monthly budget of an average household.

| Category | Amount(Rs.) |
|----------|-------------|
| Food | 4000 |
| Clothing | 1200 |
| Rent | 2000 |
| Savings | 1500 |
| Other expenses | 1800 |

The approximate percentage of the monthly budget **NOT** spent on savings is

   a) 10%
   b) 14%
   c) 81%
   d) 86%

8) There are eight bags of rice looking alike, seven of which have equal weight and one is slightly heavier. The weighing balance is of unlimited capacity. Using this balance, the minimum number of weighings required to identify the heavier bag is

   a) 2
   b) 3
   c) 4
   d) 8

9) Raju has 14 currency notes in his pocket consisting of only Rs. 20 notes and Rs. 10 notes. The total money value of the notes is Rs. 230. The number of Rs. 10 notes that Raju has is

   a) 5
   b) 6
   c) 9
   d) 10

10) **One of the legacies of the Roman legions was discipline. In the legions, military law prevailed and discipline was brutal. Discipline on the battlefield kept units obedient, intact and fighting, even when the odds and conditions were against them.**

    Which one of the following statements best sums up the meaning of the above passage?

    a) Thorough regimentation was the main reason for the efficiency of the Roman

legions even in adverse circumstances.

b) The legions were treated inhumanly as if the men were animals.

c) Discipline was the armies inheritance from their seniors.

d) The harsh discipline to which the legions were subjected to led to the odds and conditions being against them.

## 2 A : ENGINEERING MATHEMATICS (Compulsory)

11) For the matrix $vecM = \begin{pmatrix} 1 & 4 & 5 \\ 0 & 2 & 6 \\ 0 & 0 & 3 \end{pmatrix}$, consider the following statements:

P: 3 is an eigenvalue of M. Q: $\begin{pmatrix} 4 \\ 1 \\ 0 \end{pmatrix}$ is an eigenvector of M. R: $\begin{pmatrix} 4 \\ 2 \\ 0 \end{pmatrix}$ is an eigenvector of M.

Which of the above statements is **True**?

a) P and Q, but not R

b) Q and R, but not P

c) P and R, but not Q

d) P, Q, and R

12) Taylor series of $f(x) = \frac{1}{1-x}$ about $x = 0$ is given as $TS|_f = 1 + x + x^2 + x^3 + ...$ This series can be used to evaluate $f(x)$ for

a) $|x| \neq 1$

b) $x < -1$

c) $|x| < 1$

d) $-1 \leq x \leq 1$

13) Let $f(u, v) = u \ln v$ and $F(x, y) = f(u(x, y), v(x, y))$, where $u = \frac{x}{y}$ and $v = x - y$. Then $\frac{\partial F}{\partial x}$ is

a) $-\frac{x}{y^2} \ln x - y + \frac{x}{y(x-y)}$

b) $-\frac{x}{y^2} \ln v - \frac{u}{v}$

c) $\frac{x}{y^2} \ln v - \frac{u}{V}$

d) $\frac{x}{y^2} \ln v + \frac{x}{yv}$