GATE-2015-XE-1-13

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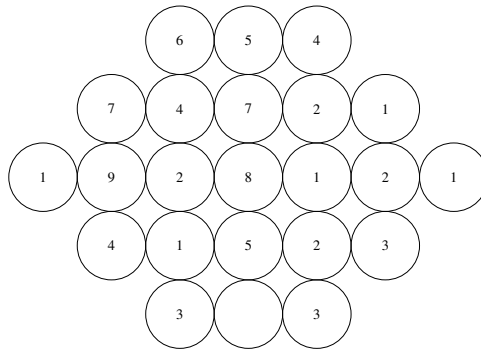
1) The principal presented the chief guest with a _____, as a token of appreciation.

   a) momento
   b) memento
   c) momentum
   d) moment

2) Frogs _____.

   a) croak
   b) roar
   c) hiss
   d) patter

3) Choose the word most similar in meaning to the given word:
   Educe

   a) Exert
   b) Educate
   c) Extract
   d) Extend

4) Operators $\square, \diamond$ and $\rightarrow$ are defined by: $a\square b = \frac{a-b}{a+b}; a\diamond b = \frac{a+b}{a-b}; a \rightarrow b = ab$. Find the value of $(66\square 6) \rightarrow (66\diamond 6)$.

   a) -2
   b) -1
   c) 1
   d) 2

5) If $\log_x(5/7) = -1/3$, then the value of x is

   a) 343/125
   b) 125/343
   c) -25/49
   d) -49/25

6) The following question presents a sentence, part of which is underlined. Beneath the sentence, you find four ways of phrasing the underlined part. Following the requirements of standard written English, select the answer that produces the most effective sentence.
   Tuberculosis, together with its effects, ranks one of the leading causes of death in India.

   a) ranks as one of the leading causes of death
   b) rank as one of the leading causes of death
   c) has the rank of one of the leading causes of death
   d) are one of the leading causes of death

7) Read the following paragraph and choose the correct statement.

Climate change has reduced human security and threatened human well-being. An ignored reality of human progress is that human security largely depends upon environmental security. But on the contrary, human progress seems contradictory to environmental security. To keep up both at the required level is a challenge to be addressed by one and all. One of the ways to curb the climate change may be suitable scientific innovations, while the other may be the Gandhian perspective on small scale progress with focus on sustainability.

a) Human progress and security are positively associated with environmental security.
b) Human progress is contradictory to environmental security.
c) Human security is contradictory to environmental security.
d) Human progress depends upon environmental security.

8) Fill the missing value

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              6    5    4
           7    4    7    2    1
        1    9    2    8    1    2    1
           4    1    5    2    3
              3         3
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9) A cube of side 3 units is formed using a set of smaller cubes of side 1 unit. Find the proportion of the number of faces of the smaller cubes visible to those which are NOT visible.

a) 1:4
b) 1:3
c) 1:2
d) 2:3

10) Which one of the statements below is logically valid and can be inferred from the above sentences?

a) Humpty Dumpty always falls while having lunch.
b) Humpty Dumpty does not fall sometimes while having lunch.
c) Humpty Dumpty never falls during dinner.
d) When Humpty Dumpty does not sit on the wall, the wall does not break.

11) Considering the matrix $\begin{pmatrix} 0 & -1 & 2 \\ 1 & 0 & 3 \\ -2 & -3 & 0 \end{pmatrix}$ which one of the following statements is
INCORRECT?

 a) One of its eigenvalues is zero.
 b) It has two purely imaginary eigenvalues.
 c) It has a non-zero real eigenvalue.
 d) The sum of its eigenvalues is zero.

12) The value of x where the function $f(x) = \sin(x) + \cos(x)$, defined over the domain $0 \le x \le 2\pi$, attains a minimum is

13) The radius of convergence of the following power series is
$\sum_{n=0}^{\infty} \frac{(x-3)^n}{3^n n!}$

 a) zero
 b) 1
 c) 3
 d) ∞