GATE - 2012 - ME

EE1030 : Matrix Theory
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1 53 - 65

1) The exit area of the nozzle in cm^2 is

   a) 90.1

   b) 56.3

   c) 4.4

   d) 12.9

Statement for Linked Answer Questions 54 and 55:

For a particular project, eight activities are to be carried out. Their relationships with other activities and expected durations are mentioned in the table below.

Activity	Predecessors	Duration(days)
a	-	3
b	a	4
c	a	5
d	a	4
e	b	2
f	d	9
g	c, e	6
h	f, g	2

2) The critical path for the project is

   a) a - b - e - g - h

   b) a - c - g - h

   c) a - d - f - h

   d) a - b - c - f - h

3) If the duration of activity f alone is changed from 9 to 10 days, then the

   a) critical path remains the same and the total duration to complete the project changes to 19 days.

   b) critical path and the total duration to complete the project remain the same.

c) critical path changes but the total duration to complete the project remains the same.

d) critical path changes and the total duration to complete the project changes to 17 days.

4) Choose the most appropriate alternative from the options given below to complete the following sentence:

Suresh's dog is the one _ _ _ _ was hurt in the stampede.

a) that
b) which
c) who
d) whom

5) The cost function for a product in a firm is given by $5q^2$, where q is the amount of production. The firm can sell the product at a market price of Rs.50 per unit. The number of units to be produced by the firm such that the profit is maximized is

a) 5
b) 10
c) 15
d) 25

6) Choose the most appropriate alternative from the options given below to complete the following sentence:

Despite several _ _ _ _ the mission succeeded in its attempt to resolve the conflict.

a) attempts
b) setbacks
c) meetings
d) delegations

7) Which one of the following options is the closest in meaning to the word given below ?

Mitigate

a) Diminish
b) Divulge
c) Dedicate
d) Denote

8) Choose the grammatically **INCORRECT** sentence:

a) They gave us the money back less the service charges of Three Hundred rupees.

b) This country's expenditure is not less than that of Bangladesh.

c) The committee initially asked for a funding of Fifty Lakh rupees, but later settled for a lesser sum.

d) This country's expenditure on educational reforms is very less.

9) Given the sequence of terms, AD CG FK JP, the next term is

a) OV

b) OW

c) PV

d) PW

10) **Wanted Temporary, Part-time persons for the post of Field Interviewer to conduct personal interviews to collect and collate economic data. Requirements: High School-pass, must be available for Day, Evening and Saturday work. Transportation paid, expenses reimbursed.**

Which one of the following is the best inference from the above advertisement ?

a) Gender-discriminatory

b) Xenophobic

c) Not designed to make the post attractive

d) Not gender-discriminatory

11) A political party orders an arch for the entrance to the ground in which the annual convention is being held. The profile of the arch follows the equation $y = 2x - 0.1x^2$ where y is the height of the arch in meters. The maximum possible height of the arch is

a) 8 metres

b) 10 metres

c) 12 metres

d) 14 metres

12) An automobile plant contracted to buy shock absorbers from two suppliers X and Y. X supplies 60% and Y supplies 40% of the shock absorbers. All shock absorbers are subjected to a quality test. The ones that pass the quality test are considered reliable. Of X's shock absorbers, 96% are reliable. Of Y's shock absorbers, 72% are reliable.

The probability that a randomly chosen shock absorber, which is found to be reliable, is made by Y is

a) 0.288

b) 0.334

c) 0.667

d) 0.720

13) Which of the following assertions are **CORRECT** ?

    P: Adding 7 to each entry in a list adds 7 to the mean of the list
    Q: Adding 7 to each entry in a list adds 7 to the standard deviation of the list
    R: Doubling each entry in a list doubles the mean of the list
    S: Doubling each entry in a list leaves the standard deviation of the list unchanged

a) P, Q
b) Q, R
c) P, R
d) R, S