

# GATE 2016

Computer Science & IT

▶ **General Aptitude**  
**(Question With Solution**  
**Set-1 & 2)**

## SET-1

1. Out of the following four sentences, select the most suitable sentence with respect to grammar and usage.

- A. I will not leave the place until the minister does not meet me.  
 B. I will not leave the place until the minister doesn't meet me.  
 C. I will not leave the place until the minister meet me.  
 D. I will not leave the place until the minister meets me.

**Ans.** D

**Sol.** Not is already embedded in until. So, A and B are incorrect. Also, the minister is a single person, and with a singular subject, singular verb follows (ending in 's'). Thus, C is incorrect and D is the right answer.

2. Archimedes said, "Give me a lever long enough and a fulcrum on which to place it, and I will move the world."

The sentence above is an example of a \_\_\_\_\_ statement.

- A. figurative                      B. collateral  
 C. literal                              D. figurine

**Ans.** A

**Sol.** Figurative is figure of speech meaning : Use of metamorphic meaning of words to explain your thoughts instead of literal use of them.

3. A cube is built using 64 cubic blocks of side one unit. After it is built, one cubic block is removed from every corner of the cube. The resulting surface area of the body (in square units) after the removal is.

- A. 56                                      B. 64  
 C. 72                                      D. 96

**Ans.** D

**Sol.** The surface area of the body will remain unchanged as when a cube is removed, it exposes three faces, which makes the number of exposed faces same as before removal.

So, surface area of the body before removal = surface area of the body after removal =  $6 * \text{side} * \text{side} = 6 * 4 * 4 = 96$ .

Thus, D is the correct choice.

4. If  $f(x) = 2x^7 + 3x - 5$  which of the following is a factor of  $f(x)$ ?

- A.  $x^3 + 8$                               B.  $(x - 1)$   
 C.  $(2x - 5)$                               D.  $(x + 1)$

**Ans.** B

**Sol.** from the option (b) substitute  $x = 1$  in

$$2x^7 + 3x - 5 = 0$$

$$2(1)^7 + 3(1) - 5 = 0$$

$$5 - 5 = 0$$

So  $(x - 1)$  is a factor of  $f(x)$

**Alternative way:**

Factors by grouping

$$: (x - 1)(2x^6 + 2x^5 + 2x^4 + 2x^3 + 2x^2 + 2x + 5)$$

5. In a process, the number of cycles to failure decreases exponentially with an increase in load. At a load of 80 units, it takes 100 cycles for failure. When the load is halved, it takes 10000 cycles for failure. The load for which the failure will happen in 5000 cycles is \_\_\_\_\_ .

- A. 40.00                                      B. 46.02  
 C. 60.01                                      D. 92.02

**Ans. B**

**Sol.** Given (C=100 for L=80) and (C=10000 for L=40)

apply these to values to above equation, this gives us 2 equations and 2 variables:

$$\log a = \log 100 + (80 \times \log k) \dots\dots\dots(A)$$

$$\log a = \log 10000 + (40 \times \log k) \dots\dots\dots(B)$$

we have 2 variables and 2 equations hence we find

$$\log a = 6$$

$$\log k = 1/20$$

now find, [  $L = (\log a - \log C) / (\log k)$  ] for C=5000 cycles

$$\Rightarrow L = (6 - \log 5000) \times 20 = 46.0206 \sim 46.02$$

**6.** If 'relftaga' means carefree, 'otaga' means careful and 'fertaga' means careless, which of the following could mean 'aftercare'?

- A. zentaga                      B. tagafer
- C. tagazen                     D. relffer

**Ans. C**

**Sol.** 'taga' and 'care' are a matching pair in every combination. So, 'taga' surely represents 'care'. Also, note here that the second half of the word in encoded value refers to the first half of the word in the decoded value. So, 'fer' represents 'less', 'relf' represents 'free' and 'o' represents 'full'. Going by the same logic, the answer would be tagazen.

**7.** Indian currency notes show the denomination indicated in at least seventeen languages. If this is not an indication of the nation's diversity, nothing else is.

Which of the following can be logically inferred from the above sentences?

- A. India is a country of exactly seventeen languages.

B. Linguistic pluralism is the only indicator of a nation's diversity.

C. Indian currency notes have sufficient space for all the Indian languages.

D. Linguistic pluralism is strong evidence of India's diversity.

**Ans. D**

**Sol.** A is incorrect as it cannot be inferred that exactly 17 languages are there, because the statement says that there are atleast 17 languages on the currency note.

B is incorrect because of the word 'only' in the option, which is too strong to be inferred.

C is incorrect as it says 'space for all Indian languages', but the number of languages in India is not mentioned in the question.

D is correct as it can be easily inferred from the statement

**8.** Consider the following statements relating to the level of poker play of four players P, Q, R and S.

- I. P always beats Q
- II. R always beats S
- III. S loses to P only sometimes
- IV. R always loses to Q

Which of the following can be logically inferred from the above statements?

- (i) P is likely to beat all the three other players
  - (ii) S is the absolute worst player in the set
- A. (i)                                      B. only (ii)
  - C. (i) and (ii)                        D. neither (i) nor (ii)

**Ans. D**

**Sol.** All three can Beat S, but S loses to P only sometimes.

So, (ii) can not be inferred from the given statements.

Defeating in Poker is not transitive. P beats Q. Q beats R and R beats S. Yet S loses to P only sometimes, meaning that S mostly wins against P.

So we can not logically infer that P is likely to beat R.

9. A rewording of something written or spoken is a \_\_\_\_\_.
- A. paraphrase                      B. paradox  
C. paradigm                         D. paraffin

**Ans.** A

**Sol.** Paraphrase - To express something in different words so that it becomes easy for the listener to understand.

10. A shaving set company sells 4 different types of razors, Elegance, Smooth, Soft and Executive.

Elegance sells at Rs. 48, Smooth at Rs. 63, Soft at Rs. 78 and Executive at Rs. 173 per piece. The table below shows the numbers of each razor sold in each quarter of a year.

Quarter/Product	Elegance	Smooth	Soft	Executive
Q1	27300	20009	17602	9999
Q2	25222	19392	18445	8942
Q3	28976	22429	19544	10234
Q4	21012	18229	16595	10109

Which product contributes the greatest fraction to the revenue of the company in that year?

- A. Elegance                      B. Executive  
C. Smooth                        D. Soft

**Ans.** B

**Sol.** Revenue from Elegance  
= (27300+25222+28976+21012) \* Rs. 48  
= Rs. 4920480  
Revenue from Smooth  
= (20009+19392+22429+18229) \* Rs. 63  
= Rs. 5043717  
Revenue from Soft  
= (17602+18445+19544+16595) \* Rs. 78  
= Rs. 5630508  
Revenue from Executive  
= (9999+8942+10234+10109) \* Rs. 173  
= Rs. 6796132  
Total Revenue = Rs. 22390837  
Fraction of Revenue for Elegance = 0.219  
Fraction of Revenue for Smooth = 0.225  
Fraction of Revenue for Soft = 0.251  
Fraction of Revenue for Executive = 0.303  
Thus B is correct Ans.

SET-2

1. The man who is now Municipal Commissioner worked as \_\_\_\_\_.
- A. the security guard at a university
  - B. a security guard at the university
  - C. a security guard at university
  - D. the security guard at the university

**Ans.** B

**Sol.** The man who is now Municipal Commissioner worked as a security guard at the university.

2. Find the odd one in the following group of words.  
Mock, deride, praise, jeer
- A. mock
  - B. deride
  - C. praise
  - D. jeer

**Ans.** C

**Sol.** 'mock, deride and jeer' are synonyms which means mockery. Therefore, the odd one is 'praise'

3. Computers were invented for performing only high-end useful computations. However, it is no understatement that they have taken over our world today. The internet, for example, is ubiquitous. Many believe that the internet itself is an unintended consequence of the original invention with the advent of mobile computing on our phones, a whole new dimension is now enabled. One is left wondering if all these developments are good or more importantly, required.

Which of the statement(s) below is/are logically valid and can be inferred from the above paragraph?

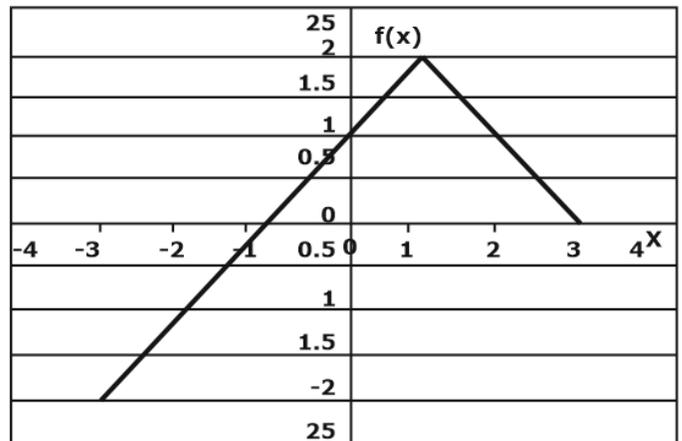
- (i) The author believes that computers are not good for us
  - (ii) Mobile computers and the internet are both intended inventions
- A. (i)
  - B. (ii) only
  - C. both (i) and (ii)
  - D. neither (i) nor (ii)

**Ans.** D

**Sol.** "Many believes that the internet itself is unintended consequence of the original invention. So statement (ii) does not follow from the passage."

The author has no where said that the computers are bad, authoring is talking about the way computers are being used today and the author questions this way. So, statement (i) does not follow.

4. Chose the correct expression for f(x) given in the graph.



- A.  $f(x)=1-|x-1|$
- B.  $f(x)=1+|x-1|$
- C.  $f(x)=2-|x-1|$
- D.  $f(x)=2+|x-1|$

**Ans.** C

**Sol.** Substituting the coordinates of the straight lines and checking all the four options given,



**Ans. A**

**Sol.** F → Facebook, W → WhatsApp, E → Total faculties

Given

$$n(E) = 150, n(\overline{F \cup W}) = 30$$

$$n(F \cup W) = n(E) - n(\overline{F \cup W}) = 150 - 30$$

$$n(F \cup W) = 120$$

$$n(F \cup W) = n(F) + [n(W) - n(F \cap W)]$$

$$120 = n(F) + 85$$

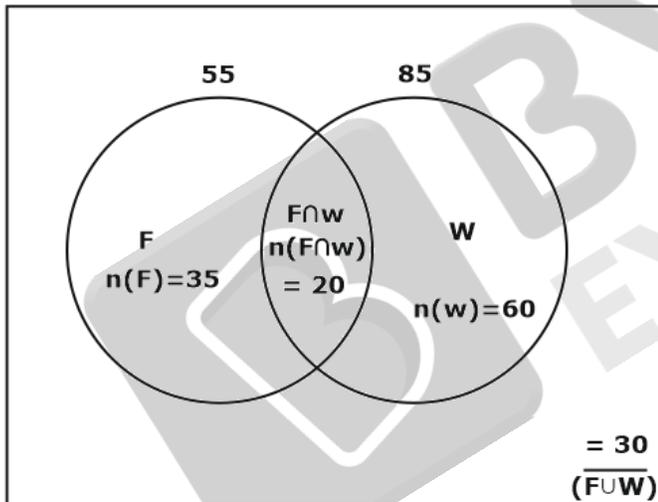
$$n(F) = 120 - 85 = 35$$

$$55 = n(F) + n(F \cap W)$$

$$n(F \cap W) = 55 - n(F) = 55 - 35 = 20$$

$$n(W) = 85 - 20 = 65$$

E, n(E) = 150



**10.** All hill-stations have a lake. Ooty has two lakes.

Which of the statement(s) below is/are logically valid and can be inferred from the above sentences?

- (i) Ooty is not a hill-station
- (ii) No hill-station can have more than one lake.

- A. (i) Only
- B. (ii) Only
- C. both (i) and (ii)
- D. neither (i) nor (ii)

**Ans. D**

**Sol.** Here All hill-stations have a lake" but any place having a lake is surely a hill station.

Ooty may or may not be a hill station Hence (i) is false

Here, it is not a compulsion that a place need to have exactly one lake to be a hill station.

Hence (ii) is also false

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