

Sunday, when both of the clock will show the same time again?

**Q.15** A wall clock gains 02 min per 12 hour while a table clock loses 02 min per 36 hour.

They both set right at 12:00 am on Monday, when both of the clock will show the same time again?

**Q.16** A faulty wall clock is known to gain 15 minutes every 24 hours. It is synchronized to the correct time at 9 AM on 11th July. What will be the correct time to the nearest minute when the clock shows 2 PM on 15th July of the same year?

- (A) 12:45 PM      (B) 12:58 PM  
(C) 1:00 PM      (D) 2:00 PM

**[GATE 2021 : IIT Guwahati (CE-2)]**

**Q.17** Two and a quarter hours back, when seen in a mirror, the reflection of a wall clock without number markings seemed to show 1:30. What is the actual current time shown by the clock?

- (A) 8 : 15      (B) 11 : 15  
(C) 12 : 15      (D) 12 : 45

**[GATE 2016 : IISc-Bangalore (EC-2, ME-3)]**

### 11.3 Blood Relation

**Q.1** M has a son Q and a daughter R. He has no other children. E is the mother of P

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**Q.6** Pointing to a man in a photograph a woman says, He is the father-in-law of the wife of only grandson of my own father-in-law.

How is woman related to man?

- (A) Son      (B) Wife  
(C) Cousin      (D) Nephew

**Q.7** Pointing towards Neha, Samar said 'I am the only son of her mother's son.'

How is Neha related to Samar?

- (A) Aunt      (B) Niece  
(C) Mother      (D) Cousin

**Q.8** These questions are based on the following information.

'X @ Y' Means 'X is the mother of Y'

'X \$ Y' Means 'X is the husband of Y'

'X # Y' Means 'X is the sister of Y'

'X \* Y' Means 'X is the son of Y'

M \* H @ D \* K, in this what is relation of K with M?

- (A) Mother      (B) Father

**Q.3**

P, Q, R, S and T are related and belong to the same family. P is the brother of S. Q is the wife of P, R and T are the children of the siblings P and S respectively. Which one of the following statements is necessarily FALSE?

- (A) S is the sister-in-law of Q  
(B) S is the aunt of R  
(C) S is the brother of P  
(D) S is the aunt of T

**[GATE 2019 : IIT Madras (CE-1)]**

**Q.4**

M and N had four children (P, Q, R and S) of them, only P and R are married. They had children X and Y respectively. If Y is the legitimate child of W, which one of the following statement is necessarily FALSE?

- (A) W is the wife of P  
(B) W is the wife of R  
(C) M is the grandmother of Y  
(D) R is the father of Y

**[GATE 2019 : IIT Madras (ME-1)]**

**Q.5**

Pointing towards a Man a woman said 'he is the only son of my mother's mother, How is the woman related to the man?

- (A) Mother      (B) Aunt  
(C) Cousin      (D) Niece

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- (A) MCHTX      (B) MXHTC  
(C) XMHCT      (D) XMHTC

**[GATE 2014 : IIT Kharagpur (EC-4, ME-4)]**

**Q.2**

If ROAD is written as URDG, then SWAN should be written as..

- (A) VXDQ      (B) VZDQ  
(C) VZDP      (D) UXDQ

**[GATE 2015 : IIT Kanpur (EC-4, ME-4)]**

**Q.3**

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

**[GATE 2016 : IISc Bangalore (CE-1, CS-1)]**

**Q.4**

In a certain code, AMCF is written as EQGJ and NKUF is written as ROYJ.

How will DHLP be written in that code?

- (A) RSTN      (B) TLPH

(C) Father-in-law (D) Sister

**Q.9** These questions are based on the following information.

'X @ Y' Means 'X is the mother of Y'

'X \$ Y' Means 'X is the husband of Y'

'X # Y' Means 'X is the sister of Y'

'X \* Y' Means 'X is the son of Y'

Which of the following indicates the relationship 'R' is the daughter of T?

(A) R # F \* B @ T (B) R # F \* B \$ T

(C) T @ B # R \* F (D) T @ B # F \* R

**Q.10** These questions are based on the following information.

'X @ Y' Means 'X is the mother of Y'

'X \$ Y' Means 'X is the husband of Y'

'X # Y' Means 'X is the sister of Y'

'X \* Y' Means 'X is the son of Y'

If F # J \* T \$ R @ L, then which of the following is definitely true?

(A) L is the brother of F.

(B) F is the sister of L.

(C) F is the brother of J.

(D) L is the brother of J.

#### 11.4 Coding-Decoding

**Q.1** If "KCLFTSB" stands for "best of luck" and "SHSWDG" stands for "good wishes", which of the following indicates "ace the exam"?

(C) HLPT

(D) XSVR

**[GATE 2018 : IIT Guwahati (EE)]**

**Q.5** If E = 10; J = 20; O = 30; T = 40, what will be P + E + S + T?

(A) 51

(B) 120

(C) 82

(D) 164

**[GATE 2019 : IIT Madras (CE-1)]**

**Q.6** If IMHO = JNIP, IDK = JEL and SO = TP then IDC = \_\_\_\_\_.

(A) JDE

(B) JED

(C) JCE

(D) JEC

**[GATE 2019 : IIT Madras (ME-2)]**

**Q.7** P, Q, R and S are to be uniquely coded using  $\alpha$  and  $\beta$ . If P is coded as  $\alpha\alpha$  and Q as  $\alpha\beta$ , then R and S respectively, can be coded as..

(A)  $\beta\alpha$  and  $\beta\beta$

(B)  $\alpha\beta$  and  $\beta\beta$

(C)  $\beta\beta$  and  $\alpha\alpha$

(D)  $\beta\alpha$  and  $\alpha\beta$

**[GATE 2020 : IIT Delhi (IN, ME-1, MT)]**

**Q.8** If P = 3, R = 27, T = 243, then Q + S = ?

(A) 40

(B) 110

(C) 90

(D) 80

**[GATE 2020 : IIT Delhi (CS, IT)]**

**Q.9** If 0, 1, 2..... 7, 8, 9 are coded as O, P, Q....., V, W, X then 4,5 will be coded as..

(A) SU

(B) ST

(C) SS

(D) TS

**[GATE 2020 : IIT Delhi (CE-1)]**

#### Letters Series

**Q.10** Given the sequence of terms, AD, CG, FK, JP, the next term is  
(A) OV (B) OW  
(C) PV (D) PW

**[GATE 2012 : IIT Delhi (CE, CH, CS, ME, PI)]**

**Q.11** Find the next term in the sequence :  
7G, 11K, 13M, \_\_\_\_

(A) 15Q (B) 17Q  
(C) 15P (D) 17P

**[GATE 2014 : IIT Kharagpur (EC-3, ME-3)]**

**Q.12** Find the next term in the sequence :  
13M, 17Q, 19S, \_\_\_\_  
(A) 21W (B) 21V  
(C) 23W (D) 23V

**[GATE 2014 : IIT Kharagpur (EC-4, ME-4)]**

**Q.13** Find the missing sequence in the letter series below: A, CD, GHI, ?, UVWX  
(A) LMN (B) MNO  
(C) MNOP (D) NOPQ

**[GATE 2015 : IIT Kanpur (EC-3, CH)]**

**Q.14** Find the missing sequence in the letter series.  
B, FH, LNP, \_\_\_\_

**Q.19** Pick the odd one from the following options.

(A) CADBE (B) JHKIL  
(C) XVYWZ (D) ONPMQ

**[GATE 2016 : IISc Bangalore (CS-2, EE-1)]**

**Q.20** Pick the odd one out in the following :  
13, 23, 33, 43, 53

(A) 23 (B) 33  
(C) 43 (D) 53

**[GATE 2016 : IISc Bangalore (EE-2)]**

#### Number Series

**Q.21** Fill in the missing number in the series.

2 3 6 15 \_\_\_\_ 157.5  
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**[GATE 2014 : IIT Kharagpur (EC-2, ME-2)]**

**Q.22** What is the next number in the series?  
12 35 81 173 357 \_\_\_\_

**[GATE 2014 : IIT Kharagpur (EC-1, ME-1)]**

**Q.23** The next term in the series is 81, 54, 36, 24 \_\_\_\_?

**[GATE 2014 : IIT Kharagpur (EC-3, ME-3)]**

**Q.24** What is the missing number in the



**Q.31** Which of the following may be the code for 'Day Was Good' in the given code language?

- (A) su mu ku      (B) da me mu  
(C) su pe ma      (D) ku pa da

**Direction for Questions 32 and 36**

In a certain code language

'Indian banks are associates' is written as 'za pn ka sh',

'SBI has associates banks' is written as 'pn za bi ti',

'National and Indian institute' is written as 'na ha sh sn'

'National has international banks' is written as 'bi na mn pn'.

**Q.32** How is 'banks' written in that code language?

- (A) Pn                (B) sn  
(C) ti                (D) za

**Q.33** International' is written as?

- (A) mn                (B) na  
(C) bi                (D) Eithr 1 or 3

**Q.34** What does 'ti' stands for?

- (A) sbi               (B) has  
(C) banks            (D) Eithr 1 or 2

**(iii)** If the third letter is a vowel it is to be coded as '**S**'

**Q.37 WHIMTD**

- (A) @3S786            (B) @3S768  
(C) 63S73@            (D) @3S78@

**Q.38 WEMKUA**

- (A) \$5d %#\$           (B) \$d7%#\$  
(C) \$57%#@            (D) \$57%#\$

**Q.39 EMDFHK**

- (A) %76~3%           (B) 576~35  
(C) 576~3%            (D) %76~35

**Q.40 QTRUJE**

- (A) 48d#95            (B) 581#95  
(C) 581#94            (D) 582#95

**11.5 Order & Ranking**

**Q.1** In a row of 45 students, Kabir is 26<sup>th</sup> from right end of the row. What is the rank of Kabir from left end of the row?

**Q.2** In a row of 38 students, Priti is 21<sup>st</sup> from Left end of the row. What is the rank of Priti from Right end of the row?

**Q.3** In a Class of 36 students, Harry is 13<sup>th</sup> from left end of the row and Sejal is 15<sup>th</sup> from Right end of the row. How many students will sit between them?

**Q.4** In a Class of 28 students, Sonu is 17<sup>th</sup> from left end of the row and Pinky is 19<sup>th</sup> from Right end of the row. How many students will sit between them?

**Q.5** In a row of players Sachin is 13<sup>th</sup> from Left end of the row and Saurav is 17<sup>th</sup> from Right end of the row, If there are 10 players sit between them.

Then how many players are there in the row?

**Q.6** In a row of Actors Guddu is 11<sup>th</sup> from Left end of the row and Bablu is 15<sup>th</sup> from Right end of the row, If there are 10 Actors sit between them.

Then how many Actors are there in the row?

**Q.7** L, M and N are waiting in a queue meant for children to enter the zoo. There are 5 children between L and M, and 8 children between M and N. If there are 3 children ahead of N and 21 children behind L, then what is the minimum number of children in the queue?

- (A) 28                (B) 27  
(C) 41                (D) 40

**[GATE 2011 : IIT- Madras (AE, MN)]**

- (A) True  
(B) False  
(C) Uncertain  
(D) Data insufficient

**[GATE 2015 : IIT-Kanpur (IN, ME-3, MT, PI)]**

**Q.11** In a group of four children, Som is younger to Riaz. Shiv is elder to Ansu. Ansu is youngest in the group. Which of the following statements is /are required to find the eldest child in the group?

Statements :

1. Shiv is younger to Riaz.
  2. Shiv is elder to Som.
- (A) Statement 1 by itself determines the eldest child.  
(B) Statement 2 by itself determines the eldest child.  
(C) Statements 1 and 2 are both required to determine the eldest child.  
(D) Statements 1 and 2 are not sufficient to determine the eldest child.

**[GATE 2014 : IIT-Kharagpur (CE-2, IN,**

- Q.8** Ravi is taller than Arun but shorter than Iqbal. Sam is shorter than Ravi. Mohan is shorter than Arun. Balu is taller than Mohan and Sam. The tallest person can be :



[GATE 2012 : IIT-Delhi (AR, GG, TF)]

- Q.9** Abhishek is elder to Savar. Savar is younger to Anshul. Which of the given conclusions is logically valid and is inferred from the above statements?

- (A) Abhishek is elder to Anshul
  - (B) Anshul is elder to Abhishek
  - (C) Abhishek and Anshul are of the same age
  - (D) No conclusions follows

[GATE 2013 : IIT-Bombay (CE, MT)]

- Q.10** Tanya is older than Eric.  
Cliff is older than Tanya.  
Eric is older than Cliff.  
If the first two statements are true,  
then the third statement is:

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- The number of students that are taller than R is the same as number of student shorter than .



[GATE 2019 : IIT-Madras (CS-2)]

- Q.14** Consider the following gold articles P, Q, R, S and T with different weights :

  - P weighs twice as much as Q
  - Q weighs four and a half times as much as R
  - R weighs half as much as S
  - S weighs half as much as T
  - T weighs less than P but more than R

Article T will be lighter in weight than :

- (A) P and S      (B) P and R  
 (C) P and Q      (D) Q and R

[ESE 2020]

- Q.15** Consider the following students in an examination :

- A scored more than B
  - C scored as much as D
  - E scored less than F
  - B scored more than C

- F scored less than D

- Q.12

Consider five people – Mita, Ganga, Rekha, Lakshmi and Sana. Ganga is taller than both Rekha and Lakshmi. Lakshmi is taller than Sana. Mita is taller than Ganga.

Which of the following conclusions are true?

1. Lakshmi is taller than Rekha  
2. Rekha is shorter than Mita  
3. Rekha is taller than Sana  
4. Sana is shorter than Ganga

(A) 2 and 4                    (B) 1 only  
(C) 1 and 3                    (D) 3 only

[GATE 2019 : IIT-Madras (EE)]

- Q.13** Six students P, Q, R, S, T and U with distinct heights, compare their heights and make the following observations.

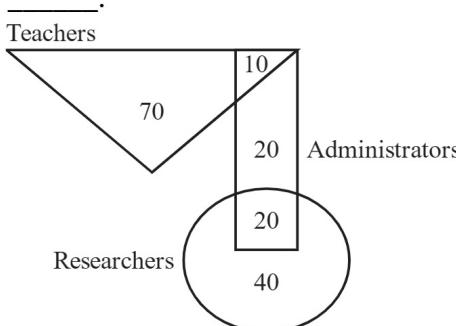
Observation I : S is taller than R.

Observation II : Q is the shortest of all.

Observation III : U is taller than only one student.

Observation IV : T is taller than S but is not tallest

in the circle and administrators in the rectangle. Out of the total number of the people, the percentage of administrators shall be in the range of





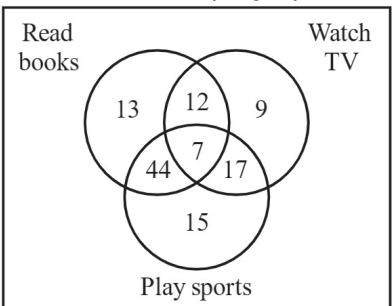

[GATE 2019 : IIT Madras (CH- CS)]

- Q.3** 25 persons are in a room. 15 of them play hockey, 17 of them play football and 10 of them play both hockey and football. Then the number of persons playing neither hockey nor football is

[ESE 2020]

## 11.6 Venn Diagram

- Q.1** The Venn diagram shows the preference of the student population for leisure activities. From the data given, the number of students who like to read books or play sports is \_\_\_\_.






[GATE 2016 : IISc Bangalore (EC-2, ME-3)]

- Q.2** In the given diagram, teachers are represented in the triangle, researchers

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[GATE 2015 : IIT Kharagpur (CE-2)]



[GATE 2018 : UT Guwahati (ME, 2, BN)]

- Q.8** [GATE 2018 : III Guwahati (ME-2, PI)] In a sports academy of 300 people, 105 play only cricket, 70 play only hockey, 50 play only football, 25 play both cricket and hockey, 15 play both hockey and football and 30 play both cricket and football. The rest of them play all three sports.

indicate course enrolment as follows : Chemistry (329), Physics (186), Mathematics (295), Chemistry and Physics (83), Chemistry and Mathematics (217), and Physics and Mathematics (63). How many students are taking all 3 subjects?



[GATE 2017 : IIT Roorkee (EC-2)]

- Q.5** Among 150 faculty members in an institute, 55 are connected with each other through Facebook® and 85 are connected through WhatsApp®. 30 faculty members do not have Facebook® or WhatsApp® accounts. The number of faculty members connected only through Facebook®



[GATE 2016 : IISc Bangalore (CS-2, EE-1)]

**Q.10** A gathering of 50 linguists discovered that 4 knew Kannada, Telugu and Tamil, 7 knew only Telugu and Tamil, 5 knew only Kannada and Tamil, 6 knew only Telugu and Kannada. If the number of linguists who knew Tamil is 24 and those who knew Kannada is also 24, how many linguists knew only Telugu?



[GATE 2010 : IIT Guwahati (TF)]

- Q.11** In a class of 300 students in an M.Tech programme, each student is required to take at least one subject from the following three:

## M600 : Advanced Engineering Mathematics

C600 : Computational Methods for

Engineers  
E600 : Experimental Techniques for

The registration date for the M.Tech

The registration data for the M.Tech class shows that 100 students have taken M600, 200 students have taken C600, and 60 students have taken E600. What is the maximum possible number of students in the class who have taken all the above three subjects?

three sports. What is the percentage of people who play at least two sports?  
(A) 25.00                          (B) 28.00  
(C) 23.30                          (D) 50.00

[GATE 2019 : IIT Madras (CH, CS)]

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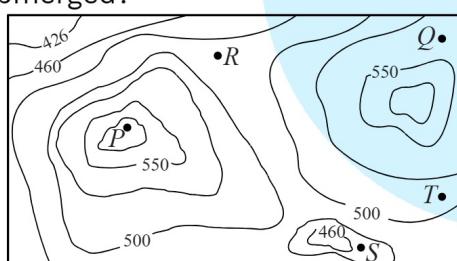
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correctly by 1,00,000 candidates. Both questions *B* and *C* were answered correctly by 90,000 candidates. Both questions *A* and *C* were answered correctly by 80,000 candidates. If the number of students answering all questions correctly is the same as the number answering none, how many candidates failed to clear the test?

(C) 3,90,000      (D) 4,20,000

18 : IIT Guwahati

**Q.14** A contour line joins locations having the same height above the mean sea level. The following is a contour plot of a geographical region. Contour lines are shown at 25 m intervals in this plot. If in a flood the water level rises to 525 m, which of the villages  $P$ ,  $Q$ ,  $R$ ,  $S$ ,  $T$  gets submerged?



- (A)  $P, Q$       (B)  $P, Q, T$   
 (C)  $R, S, T$       (D)  $O, R, S$

### **Subjects:**



[GATE 2011 : IIT Madras (GG, TF)]

**Q.12** In a group of 1000 people, 750 speak Hindi and 400 speak English. The number of only Hindi speaking people is:

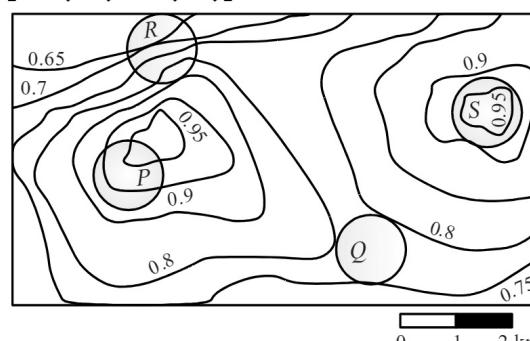


[ESE 2021]

**Q.13** To pass a test, a candidate needs to answer at least 2 out of 3 questions correctly. A total of 6,30,000 candidates appeared for the test. Question *A* was correctly answered by 3,30,000 candidates. Question *B* was answered correctly by 2,50,000 candidates, Question *C* was answered correctly by 2,60,000 candidates. Both questions *A* and *B* were answered

**Q.16** An air pressure contour line joins locations in a region having the same atmospheric pressure. The following is an air pressure contour plot of a geographical region. Contour lines are shown at 0.05 bar intervals in this plot.

[EE (S2)/CS(S2)]



If the possibility of a thunderstorm is given by how fast air pressure rises or drops over a region, which of the following regions is most likely to have a thunderstorm?



[GATE 2017 : IIT Roorkee (EE, CS Set - 2)]

## 11.7 Syllogism

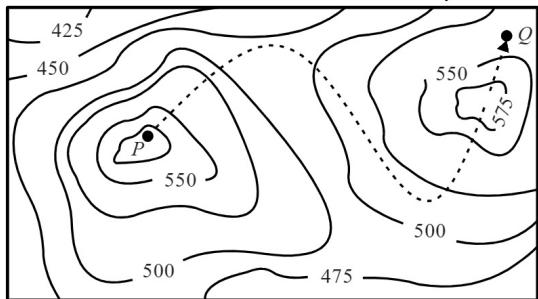
## Arguments :

All professors are researchers

Some scientists are professors

Which of the given conclusions is

**Q.15** A contour line joins locations having the same height above the mean sea level. The following is a contour plot of a geographical region. Contour lines are shown at 25 m intervals in this plot.



The path from P to Q is best described by

- (A) Up-Down-Up-Down
- (B) Down-Up-Down-Up
- (C) Down-Up-Down
- (D) Up-Down-Up

**[GATE 2017 : IIT Roorkee (EC, BT, PI Set – 1)]**

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logically valid and is inferred from the above arguments :

- (A) All scientists are researchers
- (B) All professors are scientists
- (C) Some researchers are scientists
- (D) No conclusion follows

**[GATE 2013 : IIT Bombay (CH)]**

**Q.2**

Statements :

All women are entrepreneurs.

Some women are doctors.

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

- (A) All women are doctors.
- (B) All doctors are entrepreneurs.
- (C) All entrepreneurs are women.
- (D) Some entrepreneurs are doctors.

**[GATE 2014 : IIT Kharagpur (EC-1, ME-1)]**

**Q.3**

Statements :

No manager is a leader.  
All leaders are executive.

Conclusions :

- I. No manager is an executive.
  - II. All executives are manager.
- (A) Only conclusion I follows.  
(B) Only conclusion II follows.  
(C) Neither conclusion I nor II follows.  
(D) Both conclusion I and II follow.

**[GATE 2014 : IIT Kh (IN, ME-3, MT, PI)]**

**Q.4**

Statements :

All film star are playback singers.  
All film directors are film stars.

Conclusions :

- I. All film directors are playback singers.
  - II. Some film stars are film directors.
- (A) Only conclusion I follows.  
(B) Only conclusion I nor II follows.  
(C) Neither conclusion I nor II follows.  
(D) Both conclusions I and II follow.

**[GATE 2015 : IIT Kanpur (EC-2, ME-2)]**

**Q.5**

Fact 1 : Humans are mammals.

Fact 2 : Some humans are engineers.

Fact 3 : Engineers build house.

If the above statements are facts, which of the following can be logically inferred?

- I. All mammals build houses.
- II. Engineers are mammals.
- III. Some humans are not engineers.

**Q.7**

Sentences :

All benches are beds.

No bed is a bulb.

Some bulbs are lamps.

Which of the following can be inferred?

- (i) Some beds are lamps.
  - (ii) Some lamps are beds.
- (A) Only (i)  
(B) Only (ii)  
(C) Both (i) and (ii)  
(D) Neither (i) nor (ii)

**[GATE 2017 : IIT Roorkee (CE-1, CH)]**

**Q.8**

Statements :

(i) Some roses are red.

(ii) All red flowers fade quickly.

(iii) Some roses fade quickly.

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

- (A) If (i) is true & (ii) is false, then (ii) is false
- (B) If (i) is true & (ii) is false, then (iii) is true
- (C) If (i) & (ii) are true, then (iii) is true
- (D) If (i) & (ii) are false, then (iii) is false

**[GATE 2018 : IIT Guwahati (ME-1)]**

**Q.9**

Statement :

All purple are green.

All black are green.

Conclusion :

- I. Some black are purple
- II. No black is purple

Based on the above statements and



expresses the relation in the original pair.

**Unemployed : Worker**

- (A) Fallow : Land
- (B) Unaware : Sleeper
- (C) Wit : Jester
- (D) Renovated : House

**[GATE 2010 : IIT- Guwahati (All branches)]**

- Q.2** The question below consists of a pair of related words followed by four pairs of words. Select the pair that best expresses the relation in the original pair.

**Preamble : Constitution**

- (A) Amendment : Law
- (B) Prologue : Play
- (C) Episode : Serial

- Q.9** Select the word that fits the analogy

**Do : Undo :: Trust : \_\_\_\_\_**

- (A) Intrust
- (B) Untrust
- (C) Entrust
- (D) Distrust

**[GATE 2020 : IIT-Madras (EE)]**

- Q.10** Select the word that fits the analogy

**Build : Building :: Grow : \_\_\_\_\_**

- (A) Growth
- (B) Grew
- (C) Growed
- (D) Grown

**[GATE 2020 : IIT-Madras (IN, ME-1, MT)]**

- Q.11** Select the word that fits the analogy :

**White : Whitening :: Light : \_\_\_\_\_**

- (A) Enlightening
- (B) Lightning
- (C) Lightening
- (D) Lighting

**[GATE 2020 : IIT-Madras(ME-2, PI)]**

- Q.12** Select the word that fits the analogy :

**Fuse : Fusion :: Use : \_\_\_\_\_**

- (A) Usage
- (B) User
- (C) Uses
- (D) Union

**[GATE 2020 : IIT-Madras (CE-1)]**

- Q.13** Select the word that fits the analogy :

**Partial : Impartial :: Popular : \_\_\_\_\_**

- (A) Unpopular
- (B) Impopular
- (C) Dispopular
- (D) Mispopular

**[GATE 2020 : IIT-Madras (CE-2)]**

- Q.14** Select the word that fits the analogy:

**Cook : Cook :: Fly : \_\_\_\_\_**

- (A) Flyer
- (B) Flying
- (C) Flew
- (D) Flightier

**[GATE 2020 : IIT-Madras(CS, IT)]**

- Q.15** Select the word that fits the analogy:

**Cover : Uncover :: Associate : \_\_\_\_\_**

- (A) Unassociate
- (B) Dissociate

the pair:

**Children : Pediatrician**

- (A) Adult: Orthopedist
- (B) Females: Gynecologist
- (C) Kidney: Nephrologist
- (D) Skin: Dermatologist

**[GATE 2015 : IIT-Kanpur (CE-1, CS-3)]**

**Q.7**

A court is to a judge as \_\_\_\_\_ is to a teacher.

- (A) A student
- (B) A punishment
- (C) A syllabus
- (D) A school

**Q.8**

Select the word that fits the analogy :

**Explicit : Implicit :: Express : \_\_\_\_\_**

- (A) Repress
- (B) Suppress
- (C) Compress
- (D) Impress

**[GATE 2020 : IIT-Delhi (EC)]**



- (C) Land
- (D) Water

**[GATE 2021 : IIT-Bombay (EE)]**

**Q.18** **Pen : Write :: Knife : \_\_\_\_\_**

Which one of the following options maintains a similar logical relation in the above?

- (A) Sharp
- (B) Cut
- (C) Blunt
- (D) Vegetables.

**[GATE 2021 : IIT-Bombay (CS-2)]**

**11.9 Seating Arrangement**

- Q.1** S, T, U, V, W, X, Y and Z are seated around a circular table. T's neighbors are Y and V. Z is seated third to the left of T and second to the right of S. U's neighbors are S and Y; and T and W are not seated opposite each other. Who is third to the left of V?

- (A) X
- (B) W
- (C) U
- (D) T

**[GATE 2017 : IIT-Roorkee (EC-1, PI)]**

- Q.2** P, Q, R, S, T and U are seated around a circular table. R is seated two places to the right of Q. P is seated three places to the left of R. S is seated opposite U. If P and U now switch seats, which of the following must necessarily be true?

- (A) P is immediately to the right of R.
- (B) T is immediately to the left of P.
- (C) T is immediately to the left of P or P is immediately to the right of Q.
- (D) U is immediately to the right of R or P is immediately to the left of T.

**[GATE 2017 : IIT-Roorkee(CE-2, IN)]**

- (C) Inassociate      (D) Misassociate  
[GATE 2020 : IIT-Madras (CH, BT)]

**Q.16** Nostalgia is to anticipation as \_\_\_\_\_ is to \_\_\_\_\_.  
Which one of the following options maintains a similar logical relation in the above sentence?  
(A) Future, Past      (B) Future, Present  
(C) Past, Future      (D) Present, Past

**[GATE 2021 : IIT-Bombay (EC)]**

**Q.17** Oasis is to sand as island is to \_\_\_\_\_.  
Which one of the following options maintains a similar logical relation in the above sentence?

(A) Mountain      (B) Stone

General Aptitude

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Six people are seated around a circular table. There are atleast two men and two women. There are atleast three right-handed persons. Every woman has a left-handed person to her immediate right. None of the women are right-handed. The number of women at the table is

- (A) 2
  - (B) 3
  - (C) 4
  - (D) Cannot be determined

**[GATE 2017 : IIT-Roorkee (CS-1, EE-1)]**

1. Mathew is not standing next to Seema.
  2. There are two people standing between Lohit and the engineer.
  3. Rahul is not a doctor.
  4. The teacher and the dancer are standing next to each other.
  5. Seema is turning to her right to speak to the doctor standing next to her.

Who among them is an Engineer?



**[GATE 2019 : IIT-Madras (EC)]**

Q.3

P, Q, R, S, T, U, V, and W are seated around a circular table.

- (i) S is seated opposite to W.  
(ii) U is seated at the second place to the right of R.  
(iii) T is seated at the third place to the left of R.  
(iv) V is a neighbor of S.

Which of the following must be true?

(A) P is not seated opposite to Q  
(B) R is the left neighbor of S  
(C) Q is a neighbor of R  
(D) P is a neighbor of R

[GATE 2020 : IIT-Delhi (CH, BT)]

orders in which P, Q and T may be arranged is \_\_\_\_\_.



[GATE 2019 : IIT-Madras (EC)]

**Q.8** Four persons P, Q, R and S are to be seated in a row, all facing the same direction, but not necessarily in the same order. P and R cannot sit adjacent to each other. S should be seated to the right of Q. Then number of distinct seating arrangements possible is



**Q.9** [GATE 2021 : IIT-Bombay (IN, CE-1)] Four persons P, Q, R and S are to be seated in row. R should not be seated at the second position from the left end of the row. The number of distinct seating arrangements possible is



**Q.10** Five persons P, Q, R, S and T are sitting in a row not necessarily in the same order. Q and R are separated by one person, and S should not be seated adjacent to Q. The number of distinct seating arrangements possible is



**[GATE 2021 : IIT-Bombay (ME-1)]**

**Q.11** Five person P, Q, R, S and T are to be seated in a row, all facing the same direction, but not necessarily in the same order. P and T cannot be seated at either end of the row. P should not

refused to sleep next to R since he snored loudly. P and S wanted to avoid Q as he usually hugged people in sleep. Assuming everyone was satisfied with the sleeping arrangements, what is the order in which they slept?

- (A) RSPTQ                          (B) QRSPT  
(C) QTSPR                          (D) SPRTQ

[GATE 2020 : IIT-Delhi (CE-1)]

**Q.7** Five different books (P, Q, R, S, T) are to be arranged on a shelf. The books R and S are to be arranged first and second respectively from right side of the shelf. The number of different

- (A) Rahul and Murali
  - (B) Srinivas and Arul
  - (C) Srinivas and Murali
  - (D) Srinivas and Rahul

[GATE 2017 IIT-Roorkee (CS-1, EE-1)]

**Directions for Questions 13 to 15**

P, Q, R, S, T, U, V, and W are seating around a square table facing the center in such a way that four of them sit at four corners of the square while four sit in the middle of each of the four sides. P sits second to right of U. U sits in the middle of one of the sides of the table. V who does not sit at any of the corners of the table sits second to the right of S. Only two people sit between S and Q (taken from one side). R is not an immediate neighbor of V. W is sits second to the left of Q. T is not an immediate neighbor of V or U.

**Q.13** Who sits exactly between U and P?



**Q.14** How many persons sit between P and W when counted in anti-clockwise direction from P?



**Q.15** What is the position of U with respect to R?

- (A) Immediate to the right
  - (B) Second to the left
  - (C) Immediate to the left.
  - (D) Third to the right

**Directions for Questions 16 to 18**

A, B, C, D, E, F, G and H are sitting around a square table in such a way that four of them sit at four corners of the square while four sit in the middle of each of the four sides. Those who sit at the four corners faces outside while

be seated adjacent to S. R is to be seated at the second position from the left end of the row. The number of distinct seating arrangements possible is :



[GATE 2021 : IIT-Bombay (ME-2)]

Rahul, Murali, Srinivas and Arul are seated around a square table. Rahul is sitting to the left of Murali, Srinivas is sitting to the right of Arul. Which of the following pairs are seated opposite each other?

1

- Which of the following pairs represents the persons who sit in the middle of the sides and face to each other?



**Q.18** If A is made to face outside direction, who would sit to the immediate right of A?



## 11.10 Logical Puzzle

01

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



Two design consultants, P and Q, started working from 8 AM for a client. The client budgeted a total of USD 3000 for the consultants. P stopped working when hour hand moved by 210 degrees on the clock. Q stopped working when the hour hand moved by 240 degrees. P took two tea breaks of 15 minutes each during her shift, but took no lunch break. Q took only one lunch break for 20 minutes, but no tea breaks. The market rate for consultants is USD 200 per hour and breaks are not paid. After paying the consultants, the client shall have USD \_\_\_\_\_ remaining in the budget.

- (A) 000.00                    (B) 300.00

those who sit in the middle of the sides face the center of the table. D sits third to the left of G. E sits third to the left of C. C does not sit any of the corners. Only one person sits between E and F. F is not an immediate neighbour of C. H is facing outside. A is not an immediate neighbour of F and H. The number of person sitting between B and D is same as between D and C.

**Q.16** Who sits exactly between E and F?



- (A) The box labelled ‘Apples’
  - (B) The box labelled ‘Apples and Oranges’
  - (C) The box labelled ‘Oranges’
  - (D) Cannot be determined

[GATE 2017 : IIT-Roorkee(CS-2, EE-2)]

**Q.4** In the following question, the first and the last sentence of the passage are in order and numbered 1 and 6. The rest of the passage is split into 4 parts and numbered as 2, 3, 4 and 5. These 4 parts are not arranged in proper order. Read the sentences and arrange them in a logical sequence to make a passage and choose the correct sequence from the given options.



[GATE 2015 : IIT-Kanpur (EC-3, CH)]

**Q.5** If two floors in a certain building are 9 feet apart, how many steps are there in a set of stairs that extends from the first floor to the second floor of the building?

**Statements :**

- I. Each step is  $\frac{3}{4}$  foot high.
  - II. Each step is 1 foot wide.

[GATE 2019 : IIT-Madras (EC)]

There are three boxes. One contains apples, another contains oranges and the last one contains both apples and oranges. All three are known to be incorrectly labelled. If you are permitted to open just one box and then pull out and inspect only one fruit, which box would you open to determine the contents of all three boxes?

Q.3

There are three boxes. One contains apples, another contains oranges and the last one contains both apples and oranges. All three are known to be incorrectly labelled. If you are permitted to open just one box and then pull out and inspect only one fruit, which box would you open to determine the contents of all three boxes?

Q.6

Based on the given statements, select the most appropriate option to solve the given question.

What will be the total weight of 10 poles each of same weight?

- Statements:

  - I. One fourth of the weight of a pole is 5 kg.
  - II. The total weight of these poles is 160 kg more than the total weight of two poles.

(A) Statement I alone is not sufficient.  
(B) Statement II alone is not sufficient.  
(C) Either I or II alone is sufficient.  
(D) Both statement I and II together are not sufficient.

0.7

The head of a newly formed government desires to appoint five of the six selected members P, Q, R, S, T and U to portfolios of Home, Power, Defense, telecom and Finance. U does not want any portfolio if S gets one of the five. R wants either Home or Finance or no portfolio. Q says that if S gets either Power or Telecom, then she must get the other one. T insists on a portfolio if P gets one.

Which is the valid distribution of portfolio?

- (A) P-Home, Q-Power, R-Defense, S-Telcom, T-Finance
  - (B) R-Home, S-Power, P-Defense, Q-Telcom, T-Finance
  - (C) P-Home, Q-Power, T-Defense, S-Telcom, U-Finance
  - (D) Q-Home, U-Power, T-Defense, R-Telcom, P-Finance

0.8

P, Q, R and S crossed a lake in a boat

- (A) Statement I alone is sufficient, but statement II alone is not sufficient.
  - (B) Statement II alone is sufficient, but statement I alone is not sufficient.
  - (C) Both statements together are sufficient, but neither statement alone is sufficient.
  - (D) Statement I and II together are not sufficient.

[GATE 2015 : IIT-Kanpur (CS-1, EE-1)]

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- (iv) Each person rowed for at least one trip
  - (v) Only one person can row during a trip

Who rowed twice?



[GATE 2018 : IIT- Guwahati (EE)]

0.9

Each of the letters arranged as below represents a unique integer from 1 to 9. The letters are positioned in the figure such that  $(A \times B \times C)$ ,  $(B \times G \times E)$  and  $(D \times E \times F)$  are equal. Which integer among the following choices cannot be represented by the letters A, B, C, D, E, F and G?

A		D
B	G	E
C		F



[GATE 2018 : IIT-Guwahati(CE-1)]

0.10

Each of the letters in the figure below represents a unique integer from 1 to 9. The letters are positioned in the figure such that each of  $(A + B + C)$ ,  $(C + D + E)$ ,  $(E + F + G)$  and  $(G + H + K)$  is equal to 13. Which integers does E represent?

A	B	C
	D	
E	F	G
	H	
	K	



**Q.11** P, Q, and R talk about S's car collection. P states that S has at least 3 cars. Q believes that S has less than 3 cars. R

that can hold a maximum of two persons, with only one set of oars. The following additional facts are available.

- (i) The boat held two persons on each of the three forward trips across the lake and one person on each of the two return trips.
  - (ii) P is unable to row when someone else is in the boat.
  - (iii) Q is unable to row with anyone else except R.

**Q.12** The police arrested four criminals – P, Q, R and S. The criminals knew each other. They made the following statements :

P says “Q committed the crime”

Q says “S committed the crime”

R says “I did not do it”

S says "What Q said about me is false"  
Assume only one of the arrested four committed the crime and only one of the statements made above is true.  
Who committed the crime?



[GATE 2019 : IIT-Madras (CH, CS)]

**Q.13** Hari (H), Gita (G), Irfan (I) and Saira (S) are siblings (i.e. brothers and sisters). All were born on 1st January. The age difference between any two successive siblings (that is born one after another) is less than 3 years. Given the following facts :

- (i) Hari's age + Gita's age > Irfan's age + Saira's age.
  - (ii) The age difference between Gita and Saira is 1 year. However, Gita is not the oldest and Saira is not the youngest.
  - (iii) There are no twins.

In what order were they born (oldest first)?



[GATE 2010 IIT-Guwahati (All Branches)]

**Q.14** For submitting tax returns, all resident males with annual income below Rs. 10 lakh should fill up form P and all resident females with income below Rs. 8 lakh should fill up form Q. All people with incomes above Rs. 10 lakh should fill up form R, except non-residents with income above Rs. 15 lakh.

indicates that to his knowledge, S has at least one car. Only one of P, Q and R is right. The number of cars owned by S is  
(A) 0  
(B) 1  
(C) 3  
(D) Cannot be determined

**[GATE 2017 : IIT-Roorkee (ME – 1)]**

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(D) A non-resident female with annual income Rs. 16 lakh

**[GATE 2014 : IIT-Kharagpur (EC-1, ME-1)]**

- Q.15** Lights of four colors (red, blue, green, yellow) are hung on a ladder. On every step of the ladder there are two lights. If one of the lights is red, the other light on that step will always be blue. If one of the lights on a step is green, the other light on that step will always be yellow. Which of the following statements is not necessarily correct?  
(A) The number of red lights is equal to the number of blue lights.  
(B) The number of green lights is equal to the number of yellow lights.  
(C) The sum of the red and green lights is equal to the sum of the yellow and blue lights.  
(D) The sum of the red and blue lights is equal to the sum of the green and yellow lights.

**[GATE 2014 : IIT-Kharagpur (EC-2, ME-2)]**

- Q.16** Mohan, the manager, wants his four workers to work in pairs. No pairs should work for more than 5 hours. Ram and John have worked together for 5 hours. Krishna and Amir have worked as a team for 2 hours. Krishna does not want to work with Ram. Whom should Mohan allot to work with John, if he wants all the workers to continue working?  
(A) Amir  
(B) Krishna  
(C) Ram  
(D) None of the three

**[GATE 2019 : IIT-Madras (CE-2)]**

## 11.11 Logical Reasoning

- Q.1** The given statement is followed by some courses of action. Assuming the statement to be true decide the correct

residents with income above Rs. 10 lakhs, who should fill up form S. All others should fill form T. An example of a person who should fill form T is,  
(A) A resident male with annual income Rs. 9 lakh.  
(B) A resident female with annual income Rs. 9 lakh.  
(C) A non-resident male with annual income Rs. 16 lakh.

II. The government should appeal to all the residents through mass media for minimal use of water.

III. The government should ban the water supply in lower areas.

- (A) Statements I and II follow.  
(B) Statements I and III follow.  
(C) Statements II and III follow.  
(D) All statements follow.

**[GATE 2015 : IIT-Kanpur (CS-1, EE-1)]**

**Q.2** Climate change and resilience deal with two aspects - reduction of sources of nonrenewable energy resources and reducing vulnerability of climate change aspects. The terms 'mitigation' and 'adaptation' are used to refer to these aspects, respectively.

Which of the following assertions is best supported by the above information?

- (A) Mitigation deals with consequences of climate change.  
(B) Adaptation deals with causes of climate change.  
(C) Mitigation deals with actions taken to reduce the use of fossil fuels.  
(D) Adaptation deals with actions taken to combat green-house gas emissions.

**[GATE 2020 : IIT-Delhi (ME-2, PI)]**

**Q.3** After several defeats in wars, Robert Bruce went in exile and wanted to commit suicide. Just before committing suicide, he came across a spider attempting tirelessly to have its net. Time and again, the spider failed but that did not deter it to refrain from making attempts. Such attempts by the spider made Bruce curious. Thus, Bruce started observing the near impossible goal of the spider to have the net. Ultimately, the spider succeeded in having its net despite several failures.

option.

**Statement :** There has been a significant drop in the water level in the lakes supplying water to the city.

- I. The water supply authority should impose a partial cut in supply to tackle the situation.

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General Aptitude



- (A) Failure is the pillar of success.  
(B) Honesty is the best policy.  
(C) Life begins and ends with adventures.  
(D) No adversity justifies giving up hope.

**[GATE 2013 : IIT-Bombay (CS, ME, PI)]**

**Q.4** The American psychologist Howard Gardner expounds that human intelligence can be sub-categorised into multiple kinds, in such a way that individuals differ with respect to their relative competence in each kind. Based on this theory, modern educationists insist on prescribing multi-dimensional curriculum and evaluation parameters that enable development and assessment of multiple intelligences.

Which of the following statements can be inferred from the given text?

- (A) Howard Gardner insists that the teaching curriculum and evaluation needs to be multi-dimensional.  
(B) Modern educationists insist that the teaching curriculum and evaluation needs to be multi-dimensional.  
(C) Modern educationists want to develop and assess the theory of multiple intelligences.  
(D) Howard Gardner wants to develop and assess the theory of multiple intelligences.

**[GATE 2020 : IIT-Delhi (CE-1)]**

**Q.5** The dawn of the 21st century witnessed the melting glaciers oscillating between giving too much and too little to billions of people who depend on them for fresh water. The UN climate report estimates that without deep cuts to man-made emissions, at least 30% of the northern hemisphere's surface permafrost could melt by the end of the century. Given this situation of imminent global exodus of billions of people displaced by rising seas, nation-

Such act of the spider encouraged Bruce not to commit suicide. And then, Bruce went back again and won many a battle, and the rest is history.

Which of the following assertions is best supported by the above information?

- (A) Nation-states do not have environmental concerns.  
(B) Billions of people are responsible for man-made emissions.  
(C) Billions of people are affected by melting glaciers.  
(D) Nation-states are responsible for providing fresh water to billions of people.

**[GATE 2020 : IIT-Delhi (CS, IT)]**

**Q.6** Goods and Services Tax (GST) is an indirect tax introduced in India in 2017 that is imposed on the supply of goods and services, and it subsumes all indirect taxes except few. It is a destination-based tax imposed on goods and services used, and it is not imposed at the point of origin from where goods come. GST also has a few components specific to state governments, central government and Union Territories (UTs).

Which one of the following statements can be inferred from the given passage?

- (A) GST is imposed at the point of usage of goods and services.  
(B) GST does not have a component specific to UT.  
(C) GST includes all indirect taxes.  
(D) GST is imposed on the production of goods and services.

**[GATE 2020 : IIT-Delhi (CS, IT)]**

**Q.7** Repo rate is the rate at which Reserve Bank of India (RBI) lends commercial banks, and reverse repo rate is the rate at which RBI borrows money from commercial banks.

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

- (A) Decrease in repo rate will decrease cost of borrowing and increase lending by commercial banks.

states need to rethink their carbon footprint for political concerns, if not for environmental ones.

Which one of the following statements can be inferred from the given passage?

- (D) Increase in repo rate will increase cost of borrowing and increase lending by commercial banks.

**[GATE 2020 : IIT-Delhi (CH, BT)]**

**Q.8** Geneticists say that they are very close to confirming the generating roots of psychiatric illnesses such as depression and schizophrenia, and consequently, that doctors will be able to eradicate these diseases through early identification and gene therapy. On which of the following assumptions does the statement above rely?

(A) Strategies are now available for eliminating psychiatric illnesses.  
(B) Certain psychiatric illnesses have a genetic basis.  
(C) All human diseases can be traced back to genes and how they are expressed.  
(D) In the future, genetics will become the only relevant field for identifying psychiatric illnesses.

**[GATE 2014 : IIT-Kharagpur (CS-1, EE-1)]**

**Q.9 Statement :** Either P marries Q or X marries Y. Among the given options below, the logical negation of the above statement is

(B) Decrease in repo rate will increase cost of borrowing and decrease lending by commercial banks.

(C) Increase in repo rate will decrease cost of borrowing and decrease lending by commercial banks.

- (A) Neither P marries Q nor X marries Y.

(B) P does not marry Q and X marries Y.

(C) P marries Q and X marries Y.

(D) X does not marry Y and P marries Q.

**[GATE 2021 : IIT-Bombay (IN, CE-1)]**  
**Q.10** Some people suggest Anti-Obesity Measures (AOM) such as displaying calorie information in restaurant menus. Such measures sidestep addressing the core problems that cause obesity, poverty and income inequality.

Which one of the following statements summarizes the passage?

- (A) AOM are addressing the core problems and are likely to succeed.  
(B) The proposed AOM addresses the core problems that cause obesity.  
(C) AOM are addressing the problem superficially.  
(D) If obesity reduces, poverty will naturally reduce, since obesity causes poverty.

**[GATE 2021 : IIT-BOM (CS-1)]**

### Practice Questions

#### 11.1 Direction & Distance

**Q.1** P is 6 km to the south of R. T is 4 km to the east of P. Q is 10 km to the south-west of R. S is 3 km to the south of T. In which direction is R with respect to S?

- (A) North-East      (B) South-West  
(C) North-West      (D) South-East

**Q.2** From point A, Mohan walks 20 m in the north. Then turns to his right and walks 20 m to reach point B. In which direction is point B with respect to point A?

- (A) North-East      (B) South-West  
(C) North-West      (D) South-East

- (C)  $20\sqrt{2}$  m      (D)  $20\sqrt{5}$  m

**Q.4** Megha started walking from point A and walk 15 km towards east and stops at point B. Now, she turns 90° to her left and walks 12 km to reach a point C. In which direction is point A with respect to point C?

- (A) North-East      (B) South-West  
(C) North-West      (D) South-East

**Q.5** Sharmila walks 100 m to the north direction from her house. Then she walks 40m to the south. Now she turns to her right and walks 80m. In which direction is she now with respect to her house?

- (A) North-East      (B) South-West

**Q.3** From point A, Mohan walks 20 m in the north. Then turns to his right and walks 20 m to reach point B. Find the shortest distance between A and B.  
(A)  $5\sqrt{2}$  m      (B)  $10\sqrt{2}$  m

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**Q.7** In the morning after sunrise, Sita and Gita were talking to each other standing in front of each other. If the shadow of Sita falls to the left of Gita, then in which direction is Gita's face?  
(A) East      (B) West  
(C) North      (D) South

**Q.8** In the evening after sunset, Mitu and Abhi were talking to each other standing in front of each other. If the shadow of Mitu falls to the right of Abhi, then in which direction is Mitu's face?  
(A) East      (B) West  
(C) North      (D) South

**Q.9** In the evening after sunset, Mitu and Abhi were talking to each other standing in front of each other. If the shadow of Mitu falls to the right of Abhi, then in which direction is Abhi's face?  
(A) East      (B) West  
(C) North      (D) South

**Q.10** Anjana is facing South. She walks 9 km and reaches point Z and then after taking a right turn she walks 12 km to reach point Y. Finally she turns to the North and walks 4 km to reach point E. In which direction is point Z with respect to point E?  
(A) North-East      (B) South-West  
(C) North-West      (D) South-East

**Q.11** Anjana is facing South. She walks 9 km and reaches point Z and then after taking a right turn she walks 12 km to reach point Y. Finally she turns to the North and walks 4 km to reach point E. Find the shortest distance between point Y and her starting point.  
(A) 10 m      (B) 15 m  
(C) 5 m      (D) 17 m

**Q.12** Anjana is facing South. She walks 9 km and reaches point Z and then after

**Q.6** (C) North-West      (D) South-East  
Sharmila walks 100 m to the north direction from her house. Then she walks 40m to the south. Now she turns to her right and walks 80m. Find the

In which direction is point E with respect to the starting point?

(A) North-East      (B) South-West  
(C) North-West      (D) South-East  
**Q.13** Amrita starts walking from Market towards her house. She walks 10 m towards east to reach Bus stand and then turns to her left and walks 15 m to reach a shop. She buys Lays and then turns to her right and walks 25 m to reach her house. In which direction is her house with respect to market?  
(A) North-East      (B) South-West  
(C) North-West      (D) South-East

**Q.14** Amrita starts walking from Market towards her house. She walks 10 m towards east to reach Bus stand and then turns to her left and walks 15 m to reach a shop. She buys Lays and then turns to her right and walks 25 m to reach her house. In which direction is the bus stand with respect to Amrita's house?  
(A) North-East      (B) South-West  
(C) North-West      (D) South-East

**Q.15** Aditi is facing south. She turns to her left and walks 25 m and now takes a right turn and walks 5 m to reach point L. Now she turns to her right and walks 10 m and thus reaches point K. Find the shortest distance between point K and starting point.

(A)  $23\sqrt{2}$  m      (B)  $10\sqrt{23}$  m  
(C)  $\sqrt{230}$  m      (D)  $\sqrt{250}$  m

## 11.2 Clock

**Q.1** What is the angle between the hour hand and the minute hand at 6:30 PM?  
(A)  $325^\circ$       (B)  $330^\circ$   
(C)  $345^\circ$       (D)  $315^\circ$

**Q.2** What is the angle between the hour hand and the minute hand at 2:45 AM?  
(A)  $227.5^\circ$       (B)  $127.5^\circ$   
(C)  $172.5^\circ$       (D)  $272.5^\circ$

**Q.3** How many times in a day, do the hands of a clock coincide with each other?  
(A) 11      (B) 48

and reaches point Z and then after taking a right turn she walks 12 km to reach point Y. Finally she turns to the North and walks 4 km to reach point E.

- Q.5** What time is shown in the mirror if real time is 8:45?  
(A) 2:15                          (B) 3:15  
(C) 6:25                           (D) 7:15

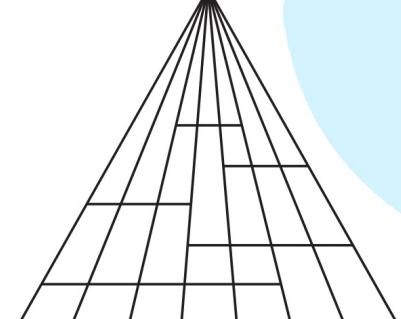
**Q.6** Time shown in a clock is 3:13, what time will appear in the water?  
(A) 1:13                           (B) 2:17  
(C) 2:13                           (D) 3:17

**Q.7** What angle is made by minute hand in 30 seconds?  
(A)  $3^\circ$                            (B)  $29^\circ$   
(C)  $30^\circ$                            (D)  $2.9^\circ$

**Q.8** What will be the water image of 7:45?  
(A) 10:45                           (B) 4:15  
(C) 9:45                           (D) 3:15

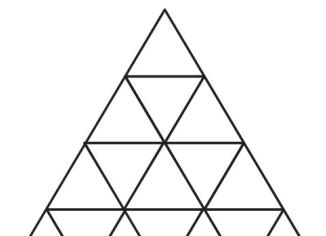
## **Counting of Figure**

- Q.1** How many Triangles are there in the figure?



(A) 33      (B) 59  
(C) 71      (D) 61

- Q.2** How many Triangles are there in the figure?

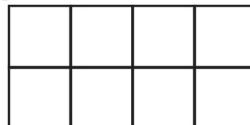


(A) 16      (B) 27      (C) 32      (D) 30

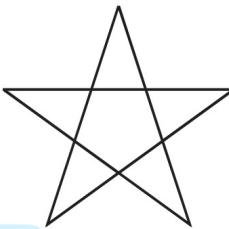
- Q.3** How many Quadrilaterals are there in the figure?

- Q.4** If mirror shows 1:13 in a clock, then what will be actual timing?

- Q.4** In a  $2 \times 4$  rectangle grid shown below, each cell is a rectangle. How many rectangles can be observed in the grid?



- Q.5** How many Triangles are there in the figure?



- Q.1** Arshi is mother of Rekha. Sunita is sister-in-law of Rekha. Tapan is maternal grandfather of Girish. Anuj is son of Puneet. If Arshi is mother of a son and a daughter, then how is Anuj related to Sunita?

- Q.2** Arshi is mother of Rekha. Sunita is sister-in-law of Rekha. Tapan is maternal grandfather of Girish. Anuj is son of Puneet. If Arshi is mother of a son and a daughter, then how is Tapan related to Anuj?

(A) Father                    (B) Father-in-law  
(C) Brother-in-law        (D) Son-in-law

- Q.3** Mohan is son of Akash. Manchun is father-in-law of Akash. Kamla is daughter-in-law of Paravati who is married to grandfather of Mohan. How is Kamla related to Anil, if Anil is Mohan's paternal uncle?

- Q.4** Pointing to photograph of a man Kalika said, "He is the son of the only son of Moran's paternal uncle."  
(A) Sister-in-law      (B) Sister  
(C) Brother            (D) Brother-in-law



- (A) Mother  
 (B) Grandmother  
 (C) Great grandmother  
 (D) None of these

**Q.5** Introducing to a girl a boy said, "She is the daughter of the father of my maternal aunt". How is the girl related to the boy?

- (A) Mother                    (B) Cousin  
 (C) Sister                    (D) Paternal Aunt

**Q.6** In a family, there are six members – P, Q, R, S, T and U. There are two married couple in the family and the number of male in the family is equal to the number of female. Q is daughter of the son of T. R is son-in-law of S. U is father-in-law of P. How is T related to S?

- (A) Mother                    (B) Sister  
 (C) Mother-in-law            (D) Daughter-in-law

**Q.7** In a family, there are six members – P, Q, R, S, T and U. There are two married couple in the family and the number of male in the family is equal to the number of female. Q is daughter of the son of T. R is son-in-law of S. U is father-in-law of P. Who among the following is father of S?

- (A) P                            (B) U  
 (C) R                            (D) None of these

**Q.8** In a family, there are six members – P, Q, R, S, T and U. There are two married couple in the family and the number of male in the family is equal to the number of female. Q is daughter of the son of T. R is son-in-law of S. U is father-in-law of P. How is R related to P?

- (A) Son-in-law                (B) Father-in-law  
 (C) Son                        (D) Father

**Q.9** In a family, there is one father, two daughters, three sisters, one mother, one brother and a husband, then how many members are there in the family?

- (A) 9                            (B) 8  
 (C) 7                            (D) 6

**Q.10** G is mother of H who is sister of K. L is son of D and husband of P. If D is married to K, then how is P related to K?

- (A) Daughter                (B) Son  
 (C) Daughter-in-law        (D) Son-in-law

#### 11.4 Coding-Decoding

##### Letters Series [SPQ's]

**Q.1** Complete the series.

DO, EP, FQ, GR, ?

- (A) IT                        (B) IR  
 (C) HT                        (D) HS

**Q.2** Select the letter cluster that will replace the '?' in the given series.

BCA, FGE, ? NOM, RSQ, VWU

- (A) JIL                        (B) JIK  
 (C) JKI                        (D) IJK

**Q.3** Select the term that will replace the '?' in the given series.

J, M, P ?, V, Y.

- (A) T                            (B) R  
 (C) Q                            (D) S

**Q.4** A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

LMK, FGE, ZAY, TUS, ?

- (A) BMQ                        (B) SRB  
 (C) LZD                        (D) NOM

**Q.5** A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

HVG, FTE, DRC, ?, ZNY

- (A) CQB                        (B) AOZ  
 (C) HRB                        (D) BPA

##### Odd One Out [SPQ's]

**Q.1** Find the ODD one out from the given options.

- (A) G                            (B) J  
 (C) T                            (D) P

**Q.2** Four words are given below among which three are similar in some respects. Find out the odd one which is different from the rest.

- (A) Onion                        (B) Banana  
 (C) Carrot                      (D) Potato

**Q.3** Find the odd one out.

- (A) CX                            (B) DW  
 (C) IR                            (D) ST



- Q.4** Four pairs of words are given below out of which three are alike in some manner and one is different.  
Which is different from the rest?  
(A) FL – UO      (B) BD – YW  
(C) MK – NP      (D) ER – VJ
- Q.5** Find the odd one out.  
(A) W23      (B) G7  
(C) H18      (D) N14
- Q.6** Four pairs are given below out of which three are alike in some manner and one is different. Which is different from the rest?  
(A) MU – 34      (B) TY – 45  
(C) LK – 23      (D) VF – 27
- Q.7** Find the odd one out.  
(A) BAL      (B) FGT  
(C) QEW      (D) LPO
- Q.8** Rearrange the jumbled letters to make a meaningful word and then select the one which is different.  
(A) GIANTLER      (B) LECRIC  
(C) MUBORSH      (D) RASQUE
- Q.9** Find the odd one out.  
(A) NX      (B) MW  
(C) BL      (D) CN
- Q.10** Find the odd one out.  
(A) RTVX      (B) NPRT  
(C) FHJL      (D) GILP
- Number Series**
- Q.1** Complete the series.  
17, 23, 31, 37, 45, 51, 59, ?  
(A) 82      (B) 64  
(C) 65      (D) 67
- Q.2** Find the missing number in the series.  
6, 8, 9, 12, ?, 18, 21  
(A) 14      (B) 15  
(C) 13      (D) 16
- Q.3** Find the missing number in the series.  
B-25, ?, F-9, H-4  
(A) C-16      (B) D-16  
(C) E-25      (D) C-25
- Q.4** Complete the series.  
12A6Z, 24C4X, 36E2V, ?  
(A) 48GOT      (B) 48G0T  
(C) 4G80T      (D) 4G80T
- Q.5** Select the number that will continue the given series.  
4, 8, 8, 16, 12, 24, ?  
(A) 48      (B) 32  
(C) 16      (D) 12
- Coding Decoding**
- Q.1** If in a certain code, "MOTHER" is written as 'JRQKBU', then how will 'PRINCIPAL' be written in that code?  
(A) MRFKZLMXI      (B) SULQFLSDO  
(C) MUHQZLMDI      (D) MRFKZFMXI
- Q.2** If in a certain code, 'CRAMP' is written as 'YNWIL', then how will 'GRASP' be written in that code?  
(A) CNWOL      (B) CWNOL  
(C) CNOWL      (D) CWONL
- Q.3** If APPLE is written as 36678, RUMMY is written as 91445, then '784539' is the code for:  
(A) LEMYAR      (B) LEYMAR  
(C) LMEAYR      (D) LMEYAR
- Q.4** If PARTY is written as '!\$%#@', COAT is written as '\*?\$\$@', then find the code for CARROT.  
(A) \*\$%?@      (B) \*\$%?%@  
(C) \*&%?@      (D) \*\$%?#
- Q.5** If JACK is written as ACJK, HUMAN is written as AHMNU and DELIVER is written as DEEILRV, find the code for MONUMENT.  
(A) EMMNNOUT      (B) EMMNNTOU  
(C) EMMNNOTU      (D) EMMNONTU
- Q.6** If OPERATE is written as QNGPCRG, then find the code for RUSSIA.  
(A) TUSQKY      (B) TSUQKY  
(C) TSUKQY      (D) TSUSQY
- Q.7** If three is written as 6, seven is written as 12, fourteen is written as 24, nine is written as 90, ten is written as 34, then how is the product of 7 and 2 written in that code?  
(A) 6      (B) 34  
(C) 24      (D) 12
- Q.8** If red is written as blue, blue is written as green, green is written as yellow, yellow is written as black, black is written as white, white is written as pink, then which of the following is the code for colour of blood of a cockroach?



- (A) Blue      (B) Black  
(C) Pink      (D) White

**Q.9** In a certain code language, 'TULSI' is written as 'WXOVL'. How will 'LEAST' be written as in that language?

- (A) OHVWW      (B) ODHVE  
(C) OHDVW      (D) OHDEV

**Q.10** If in a certain code, 'OTRIVIN' is written as 'NIVROTR', then how will 'RISKING' be written in that code?

- (A) GINPRIS      (B) GNIKRIS  
(C) GNPIRIS      (D) GNIPRIS

**Q.11** If in a certain code, 'BROMINE' is written as 'RTCRHPJ', then how will 'RADICAL' be written in that code?

- (A) GCSNOCD      (B) GCNSOCD  
(C) GCSNCOD      (D) GSCNOCD

## 11.6 Venn Diagram

**Q.1** Which of the following diagrams correctly represents the relationship between the following classes.

## Vehicle, Car, Auto

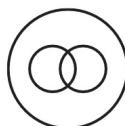
- (A) 

(B) 

(C) 

(D) 

**Q.2** Select the option that is best represented by the given set of Venn diagram.



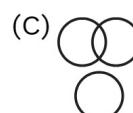
- (A) Lion, Animal, Rat
  - (B) Professors, Male, Humans
  - (C) Aunt, Teacher, Father
  - (D) Women, Brother, Sister

**Q.3** Which of the following diagrams correctly represents the relationship between the following classes.

Mothers, Nephew, Daughter

- (A)

(B)



**Q.4** Which of the following diagrams correctly represents the relationship between the following classes.  
Brother, Mother, Father

- The figure contains four separate diagrams labeled (A), (B), (C), and (D). Each diagram consists of three circles. In (A), all three circles overlap. In (B), the top two circles overlap, while the bottom circle is separate. In (C), the left two circles overlap, while the right circle is separate. In (D), the top circle overlaps with the middle circle, which in turn overlaps with the bottom circle.

**Q.5** Which of the following diagrams correctly represents the relationship between the following classes.

- (A)  (B) 

(C)  (D) 

**Q.6** Which of the following diagrams correctly represents the relationship between the following classes.

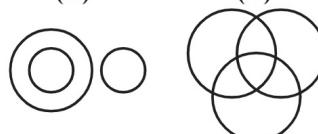
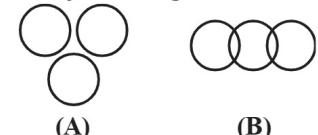
- Surat, Gujarat, Assam

(A)  (B) 

(C)  (D) 

**Q.7** Which of the following diagrams correctly represents the relationship between the following classes.

- ## Boys, Player, Singer

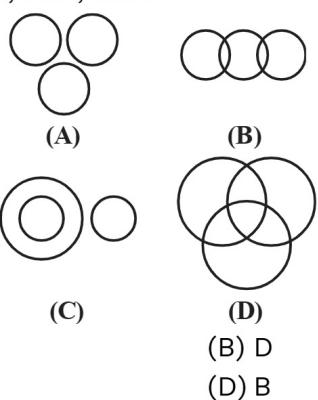


- (A) C      (B) D  
 (C) A      (D) B

**Q.8**

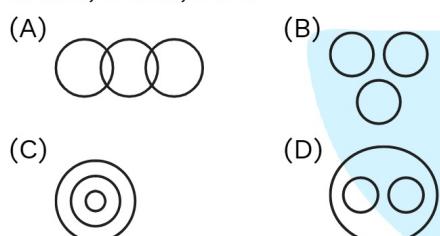
Which of the following diagrams correctly represents the relationship between the following classes.

Earth, Sun, Moon

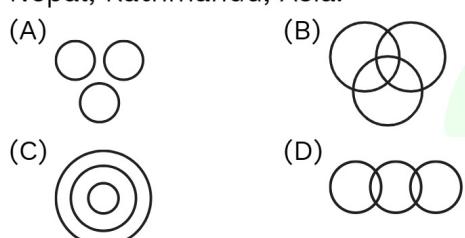
**(A) C****(C) A****(B) D****(D) B****Q.9**

Which of the following diagrams correctly represents the relationship between the following classes.

Wood, Table, Door

**Q.10**

Which of the following diagrams represent the relationship between Nepal, Kathmandu, Asia.



## 11.7 Syllogism

**Q.1** In this question, two statements are given followed by two conclusions. Choose the Conclusion (s) which best fit(s) logically.

Statements:

1. Some A are B
2. Some B are not C

Conclusions :

- I. No B is C
  - II. Some A are C
- (A) Only conclusion II follows  
 (B) Only conclusion I follows  
 (C) Either conclusion I or II follows  
 (D) None of the conclusion follows

**Q.2**

In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

1. Some apples are banana
2. All bananas are fruits

Conclusions:

- I. Some fruits are apple
  - II. Some bananas are fruits
- (A) Only conclusion II follows  
 (B) Only conclusion I follows  
 (C) Neither conclusion I nor II follows  
 (D) Both conclusions I and II follow

**Q.3**

In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

1. Some A is B
2. Some B is not C

Conclusions:

- I. Some C is B
  - II. Some C is not B
- (A) Only conclusion II follows  
 (B) Only conclusion I follows  
 (C) Either conclusion I or II follows  
 (D) Both conclusions I and II follow

**Q.4**

In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

1. Some matters are elements
2. Some matters are not molecules

Conclusions:

- I. All elements are matter
  - II. Some molecules are elements
- (A) Only conclusion II follows  
 (B) Only conclusion I follows  
 (C) Neither conclusion I nor II follows  
 (D) Both conclusions I and II follow

**Q.5**

In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

1. All men are fish
2. Some birds are fish



Conclusions:

- I. Some fishes are bird
- II. Some birds are not man
- (A) Only conclusion II follows
- (B) Only conclusion I follows
- (C) Neither conclusion I nor II follows
- (D) Both conclusions I and II follow

**Q.6** In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

- 1. Some donkeys are horse
- 2. Some tiger are donkey

Conclusions:

- I. All tiger is horse
- II. Some horse is tiger
- (A) Only conclusion II follows
- (B) Only conclusion I follows
- (C) Neither conclusion I nor II follows
- (D) Both conclusions I and II follow

**Q.7** In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

- 1. Some donkey is horse
- 2. Some tiger are donkey

Conclusions:

- I. All donkeys is horse
- II. Some horse is not tiger
- (A) Only conclusion II follows
- (B) Only conclusion I follows
- (C) Neither conclusion I nor II follows
- (D) Both conclusions I and II follow

**Q.8** In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements :

- 1. All trees are plant
- 2. All fruits are tree

Conclusions:

- I. Some fruits are plant
- II. No plant is fruit
- (A) Only conclusion II follows
- (B) Only conclusion I follows
- (C) Neither conclusion I nor II follows
- (D) Both conclusions I and II follow

**Q.9**

In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

- 1. Some statements are paragraph
- 2. Some stories are not paragraph

Conclusions:

- I. No story is paragraph
- II. Some statements are not story
- (A) Only conclusion II follows
- (B) Only conclusion I follows
- (C) None of the conclusion follows
- (D) Both conclusions I and II follow

**Q.10**

In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

- 1) All pig are animal
- 2) Some animal are not bird

Conclusions:

- I. Some pig are not bird
- II. Some animals are pig
- (A) Only conclusion II follows
- (B) Only conclusion I follows
- (C) Neither conclusion I nor II follows
- (D) Both conclusions I and II follow

**Q.11**

In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

- 1. No man is woman
- 2. No woman is lady

Conclusions:

- I. No man is lady
- II. Some men are not woman
- (A) Only conclusion II follows
- (B) Only conclusion I follows
- (C) Neither conclusion I nor II follows
- (D) Both conclusions I and II follow

**Q.12**

In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

- 1. Some potato are chips
- 2. All chips are crunchy



Conclusions:

- I. All chips are potato
- II. All crunchy is potato
- (A) Only conclusion II follows
- (B) Only conclusion I follows
- (C) Both conclusions I and II follow
- (D) None of the conclusion follows

**Q.13** In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

- 1. Some potato are chips
- 2. All chips are crunchy

Conclusions:

- I. Some chips are not crunchy
- II. Some chips are not potato
- (A) Only conclusion II follows
- (B) Only conclusion I follows
- (C) Both conclusions I and II follow
- (D) None of the conclusion follows

**Q.14** In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

- 1. Some Al are Ca
- 2. No Ca are Cu

Conclusions:

- I. Some Al are Cu
- II. Some Al are not Cu
- (A) Only conclusion II follows
- (B) Only conclusion I follows
- (C) Neither conclusion I nor II follows
- (D) Both conclusions I and II follow

**Q.15** In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

- 1. No V is J
- 2. Some J is not K

Conclusions:

- I. Some K is V
- II. Some K is not V
- (A) Only conclusion II follows
- (B) Only conclusion I follows
- (C) Neither conclusion I nor II follows
- (D) Either conclusion I or II follows

**Q.16** In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

- 1. No man is rat
- 2. No rat is cat

Conclusions:

- I. Some cats are man
- II. Some cats are not man
- (A) Only conclusion II follows
- (B) Only conclusion I follows
- (C) Either conclusion I or II follows
- (D) Both conclusions I and II follow

**Q.17** In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

- 1. Some plants are trees
- 2. Some leaves are trees

Conclusions:

- I. Some plants are not leaves
- II. Some plants are leaves
- (A) Only conclusion II follows
- (B) Only conclusion I follows
- (C) Either conclusion I or II follows
- (D) Both conclusions I and II follow

**Q.18** In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

- 1. Some matters are elements
- 2. Some matters are not molecules

Conclusions:

- I. All elements are molecules
- II. Some elements are not molecules
- (A) Only conclusion II follows
- (B) Only conclusion I follows
- (C) Neither conclusion I nor II follows
- (D) Either conclusion I or II follows

**Q.19** In this question, two statements are given followed by two conclusions. Choose the conclusion(s) which best fit(s) logically.

Statements:

- 1. Some planets are sun
- 2. No sun is star

### Conclusions:

- I. Some star is planet
  - II. Some star is not plane

(A) Only conclusion II follows

(B) Only conclusion I follows

(C) Neither conclusion I nor II follows

(D) Either conclusion I or II follows

## 11.8 Analogies

**Direction :** Select the related word/letters/numbers form the given alternatives.

- Q.1** Chug is to train as Bang is to \_\_\_\_\_  
(A) House                   (B) Animal  
(C) Door                   (D) Man

**Q.2** Chiku : Fruit : Super market :: Novel :  
\_\_\_\_ : \_\_\_\_  
(A) Book : Stationary  
(B) Book : Bookstore  
(C) Water  
(D) Shop : Market

**Q.3** Air : Ubiquitous :: Fire :  
(A) Explosion               (B) Oxygen  
(C) Water                   (D) Luminosity

**Q.4** Cook : Cook :: Fly :  
(A) Flyer                   (B) Flying  
(C) Flew                   (D) Flighter

**Q.5** Jackal : Howl :: Rain :  
(A) Hustle                   (B) Thunder  
(C) Patter                   (D) Drops

**Q.6** Marathon is to race as hibernation is to  
\_\_\_\_\_  
(A) Winter                   (B) Bear  
(C) Dream                   (D) Sleep

**Q.7** Yard is to inch as quart is to \_\_\_\_\_  
(A) Gallon                   (B) Ounce  
(C) Milk                   (D) Liquid

**Q.8** Elated : Despondent :: Enlightened :  
\_\_\_\_\_  
(A) Aware                   (B) Ignorant  
(C) Miserable               (D) Tolerant

**Q.9** Select the words that fits the analog.  
Sponge : Porous :: Rubber :  
(A) Massive                   (B) Solid  
(C) Elastic                   (D) Inflexible

**Q.10** Oar is to rowboat as foot is to \_\_\_\_\_  
(A) Skateboard               (B) Sneaker  
(C) Running                   (D) Jumping



**Direction for Questions 1 to 4**

Study the following information carefully to answer these questions. P, Q, R, S, T, U, V and W are sitting around a circular table, facing the centre. P sits third to the right of W and third to the left of Q. S sits second to the right of T. V sits second to the left of R. T is not the neighbour of Q while U is neither a neighbour of T nor of W.

- Q.1** Starting from P's position, if all the eight are arranged in alphabetical order in clockwise direction, the seating position of how many members (excluding P) would not change?

(A) None                          (B) One  
(C) Two                            (D) Three






**Direction :** Eight friends A, B, C, D, E, F, G and H are Seating in a circle facing the centre. B is Seating between G and D. H is third to the left of B and second, to the right of A. C is Seating between A and G and B and E are not Seating opposite to each other.

- Q.4** Which of the following statements is not correct?

  - (A) C is third to the right of D.
  - (B) E is Seating between F and D.
  - (C) A is Seating between C and F.
  - (D) E and C are Seating opposite of each other

**Direction :** Study the following information carefully and answer the questions given below :

Eight people X, W, Z, F, T, L, P and S are sitting in a straight line facing north and south directions. X is sitting second to the right of T and W. T is sitting third to the right of F. S is sitting fourth to the left of X. Second and fourth persons are facing south from the left end. F is sitting fourth to the left of L who is second from the left. Z is not facing towards south but sitting fourth to the left of P who is

15 | Page

- Q.5** In which direction is W facing?  
(A) North                          (B) East  
(C) West                            (D) South

**Q.6** If T changes his or her position with F, who would be sitting fourth to right of F?  
(A) L                                (B) W  
(C) Z                                (D) P

**Q.7** 6 people are sitting in a row. A is sitting towards immediate left of B and immediate right of C. C is sitting to immediate right of F. D is immediate right of E who is to the left of F, then which two people are sitting in the center?  
(A) D and B                        (B) A and B  
(C) F and C                        (D) E and D

**Q.8** Five students P, Q, R, S and T are sitting on a bench. Q is to the left of P and right of T. S is at the extreme right end and R is to the left of S. Who is sitting third from the left?  
(A) P                                (B) Q  
(C) R                                (D) T

**Q.9** Vishu, Pooja, Vishakha, Rani and Ram are sitting in a line. Pooja is third to the extreme right end. Vishu is second to the left of Pooja. Vishakha is to the right of Pooja. Rani is third to the right of Ram, who is the immediate neighbour

**Direction :** Eight girl's are seating around a square table, they are facing center.

A sits 6th to the left of B, who is sits third to the right of F. E sits 2nd to the left of F. G sits in between A and B. C sits immediate left of F, who is immediate left of D



- Q.12** What is G position with respect to C ?  
(A) Third to the right.  
(B) Third to the left.

- Q.1** Statement: An advertisement: Now you can own a new car in just Rs 1,999 per month.

- (C) Fourth to the left.  
 (D) 2nd to the right.

**Q.13** Who sits in between E and D ?

- |        |        |
|--------|--------|
| (A) AH | (B) GB |
| (C) CF | (D) AB |
| (E) AG |        |

**Q.14** Who sits fourth to the left of B?

- |       |       |
|-------|-------|
| (A) G | (B) F |
| (C) D | (D) C |

**Direction :** Eight persons A, B, C, D, E, F, G and H have different height. G is not 3rd shortest. D is not 5th tallest. Only two persons are taller than C. E is taller than F but shorter than D. H is the shortest. D is taller than G but shorter than A and C. A is not the 2nd tallest. E is not 3rd shortest.

**Q.15** Who among the following is 2nd tallest?

- |       |       |
|-------|-------|
| (A) E | (B) F |
| (C) C | (D) B |

**Q.16** How many persons are shorter than F?

- |           |          |
|-----------|----------|
| (A) Two   | (B) One  |
| (C) Three | (D) Four |

**Q.17** Who among the following is just taller to E?

- |       |       |
|-------|-------|
| (A) D | (B) F |
| (C) C | (D) B |

**Q.18** Who among the following is 5th shortest?

- |       |                   |
|-------|-------------------|
| (A) E | (B) F             |
| (C) C | (D) None of these |

**Q.19** Who among the following is third shortest?

- |       |       |
|-------|-------|
| (A) E | (B) F |
| (C) C | (D) B |

## 11.11 Logical Reasoning

### Directions for Questions 1 to 4

Given statement is followed by four assumptions numbered I, II, III and IV. An assumption is something supposed or taken for granted. You have to consider the statements and the following assumptions and decide which of the assumptions is implicit in the statement.

Assumptions:

- (A) People do not want to buy used cars.
- (B) Most people can afford to pay Rs 1,999 per month for a new car
- (C) People did not want to buy new cars.
- (D) People wants to buy expensive cars

**Q.2**

Statement: Beware of dogs. Our dogs do not bark but they are trained to distinguish between genuine guests and intruders.

Assumptions:

- (A) Barking dogs rarely bite.
- (B) Our dogs could be dangerous for intruders.
- (C) Biting dogs rarely barks.
- (D) Dogs are pet animals

**Q.3**

Statement: His recent investment in the shares of company 'A' is only a gamble.

Assumptions:

- (A) Gambling is a crime in the country.
- (B) Share market is full of risks & enjoyment.
- (C) He may incur loss or may gain from his investment.
- (D) Every one should plan investment in share market.

**Q.4**

Statement : If you could not collect the required amount by oral call you must publish an advertisement in a widely read newspaper.

Assumptions:

- (A) People rarely respond to oral call
- (B) Generally, people are reluctant to read an advertisement in a newspaper.
- (C) advertisement in a read newspaper is better then oral call.
- (D) None follows

### Directions for Questions 5 to 6

Each question below is followed by two arguments numbered I and II. You have to decide which of the argument is a 'strong' argument and which is a 'weak' argument.

**Q.5**

Statement : Should sex determination test during pregnancy be completely banned?

Arguments :

II. Human beings have other weaknesses as well.

- (A) If only Conclusion I follow

- Q.6** Statement : Should the examination bodies for all university examinations permit the use of calculators?
- Arguments:
- No, it is necessary for the students to know the methods of manual calculation to make their concepts clear.
  - Yes, manual calculations are no more required with extensive use of computers in all fields.
- (A) If only argument I is strong.  
 (B) If only argument II is strong.  
 (C) If either I or II is strong.  
 (D) If both I and II are strong.

**Directions for Questions 7 to 8**

Based on the statement given below, choose the best possible conclusion(s) that follows.

- Q.7** **Statement :** "Triple your money in 6 months" reads an advertisement.

**Conclusions:**

- The assurance is not genuine.
  - People want their money to grow.
- (A) Only Conclusion I follow  
 (B) Only Conclusion II follows  
 (C) Both Conclusions I and II follow  
 (D) Neither Conclusion I nor II follows

- Q.8** **Statement :** Smoking is one of the human weaknesses, which tends to test the willpower of the smoker to the edge.

**Conclusions :**

- It is very difficult for the smokers to give up smoking even if they want to.

- The driver of the speeding truck should be nabbed and tried for the crime he committed.
- (A) If only I follow  
 (B) If only II follows  
 (C) If neither I nor II follows

- (B) Only Conclusion II follows  
 (C) If either Conclusion I or II follows  
 (D) If both Conclusions I and II follows
- Q.9 Assertion : (A)** Earthworms are not good for agriculture.
- Reason: (R)** Earthworms break down the soil into fine particles and make it soft.
- Choose the correct option
- (A) A is true but R is false  
 (B) A is false but R is true  
 (C) Both A and R are true and R is the correct explanation of (A)  
 (D) Both A and R are false

- Q.10 Assertion : (A)** Water is essential for life.
- Reason : (R)** It is formed using three parts of hydrogen and one part of oxygen.
- (A) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.  
 (B) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.  
 (C) Both Assertion and Reason are false.  
 (D) Assertion is true but Reason is false.

**Directions for Questions 11 to 12**

In each question below is given a statement followed by two courses of action numbered I and II. On the basis of the information given in the statement, you have to assume everything in the statement to be true, then decide which of the suggested courses of action logically follow(s) for pursuing.

- Q.11** Statement : A speeding truck has seriously injured many persons sleeping on the roadside early in the morning.

Courses of action:

- The local administration should immediately put a complete ban on people sleeping on the roadsides

Courses of action

- All these students should be debarred from taking university examination in future.
- The students apprehended while using unfair means should be

(D) If both I and II follow

- Q.12** Statement : Many students were caught redhanded while using unfair means during the recent university examinations.

handed over to the police.

(A) If only I follow

(B) If only II follows

(C) If neither I nor II follows

(D) If both I and II follow

### Answer Key

#### Classroom Questions

##### 11.1 Direction & Distance

1.	A	2.	B	3.	B	4.	B	5.	C
6.	D	7.	D	8.	C	9.	A	10.	D
11.	D	12.	D	13.	D	14.	A		

##### 11.2 Clock

1.	06:50 am	2.	54°	3.	A	4.	C	5.	04:21*9/11
6.	04:54*6/11	7.	08:43*7/11 8:10*10/11	8.	04:5*5/11 04:38*2/11	9.	08:05 pm	10.	6 am Sunday
11.	9am Tuesday	12.	08:08 pm Tuesday	13.	10 pm Monday	14.	10 am Tuesday	15.	After 135 Days
16.	B	17.	D						

##### 11.3 Blood Relation

1.	B	2.	B	3.	D	4.	A	5.	D
6.	B	7.	A	8.	B	9.	B	10.	B

##### 11.4 Coding-Decoding

1.	B	2.	B	3.	C	4.	C	5.	B
6.	B	7.	A	8.	C	9.	B		

##### Letters Series

10.	A	11.	B	12.	C	13.	C	14.	C
15.	B								

##### Odd One Out

16.	D	17.	B	18.	C	19.	D	20.	B
-----	---	-----	---	-----	---	-----	---	-----	---

##### Number Series

21.	45	22.	725	23.	16	24.	B	25.	C
26.	3	27.	C						

##### Coding Decoding

28.	A	29.	A	30.	B	31.	D	32.	A
33.	A	34.	A	35.	D	36.	A	37.	A
38.	D	39.	D	40.	B				

##### 11.5 Order & Ranking

1.	20	2.	18	3.	8	4.	6	5.	40 or 18
6.	36	7.	A	8.	C	9.	D	10.	B
11.	A	12.	C	13.	C	14.	C	15.	A

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##### 11.6 Venn Diagram

1.	D	2.	C	3.	D	4.	D	5.	A
6.	A	7.	C	8.	C	9.	C	10.	C
11.	B	12.	C	13.	D				

##### Contour Line

14.	C	15.	C	16.	B				
-----	---	-----	---	-----	---	--	--	--	--

**11.7 Syllogism**

1.	C	2.	D	3.	C	4.	D	5.	B
6.	B	7.	D	8.	C	9.	D	10.	B
11.	D	12.	D.						

**11.8 Analogies**

1.	A	2.	B	3.	A	4.	B	5.	C
6.	B	7.	D	8.	A	9.	D	10.	A
11.	D	12.	A	13.	A	14.	A	15.	B
16.	C	17.	D	18.	B				

**11.9 Seating Arrangement**

1.	A	2.	C	3.	A	4.	A	5.	D
6.	A	7.	A	8.	D	9.	B	10.	D
11.	C	12.	C	13.	B	14.	B	15.	C
16.	B	17.	C	18.	D				

**11.10 Logical Puzzle**

1.	A	2.	C	3.	B	4.	B	5.	A
6.	C	7.	B	8.	C	9.	B	10.	B
11.	A	12.	B	13.	B	14.	B	15.	D
16.	B								

**11.11 Logical Reasoning**

1.	A	2.	C	3.	D	4.	B	5.	C
6.	A	7.	A	8.	B	9.	A	10.	C

**Practice Questions****11.1 Direction & Distance**

1.	C	2.	A	3.	C	4.	B	5.	C
6.	D	7.	C	8.	D	9.	C	10.	D
11.	B	12.	B	13.	A	14.	B	15.	C

**11.2 Clock**

1.	C	2.	C	3.	C	4.	D	5.	B
6.	B	7.	A	8.	A				

**Counting of Figure**

1.	D	2.	B	3.	B	4.	C	5.	D
----	---	----	---	----	---	----	---	----	---

**11.3 Blood Relation**

1.	B	2.	B	3.	A	4.	C	5.	A
6.	C	7.	B	8.	A	9.	D	10.	C

**11.4 Coding-Decoding****Letters Series**

1.	D	2.	C	3.	D	4.	D	5.	D
----	---	----	---	----	---	----	---	----	---

**Odd One Out**

1.	A	2.	B	3.	D	4.	D	5.	C
6.	D	7.	B	8.	B	9.	D	10.	D

**Number Series**

1.	C	2.	A	3.	B	4.	B	5.	C
----	---	----	---	----	---	----	---	----	---

**Coding Decoding**

1.	C	2.	A	3.	A	4.	A	5.	C
6.	B	7.	C	8.	C	9.	C	10.	D

11.	A	2.	B	3.	C	4.	C	5.	A
6.	C	7.	B	8.	C	9.	A	10.	C

### 11.7 Syllogism

1.	D	2.	D	3.	A	4.	C	5.	B
6.	C	7.	C	8.	B	9.	C	10.	A
11.	C	12.	D	13.	D	14.	A	15.	D
16.	C	17.	C	18.	D	19.	D		

### 11.8 Analogies

1.	C	2.	B	3.	D	4.	A	5.	C
6.	D	7.	B	8.	B	9.	C	10.	A
11.	B	12.	A	13.	D	14.	D	15.	C
16.	A	17.	D	18.	A	19.	C	20.	D

### 11.9 Seating Arrangement

1.	B	2.	C	3.	A	4.	B	5.	D
6.	B	7.	C	8.	A	9.	A	10.	C
11.	C	12.	B	13.	C	14.	D	15.	D
16.	B	17.	A	18.	D	19.	B		

### 11.11 Logical Reasoning

1.	B	2.	B	3.	C	4.	D	5.	A
6.	C	7.	B	8.	D	9.	B	10.	B
11.	B	12.	C						

□□□

## 12 Spatial Aptitude



### Classroom Questions

#### 12.1 Paper Folding & Cutting

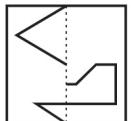
Q.1 Find out from amongst the four alternatives as to how the pattern

(A) 1 (B) 2

(C) 3 (D) 4

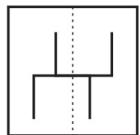
Q.4 A square transparent sheet with a

would appear when the transparent sheet is folded at the dotted line.



- (X)
- (1) (2) (3) (4)
- (A) 1 (B) 2  
(C) 3 (D) 4

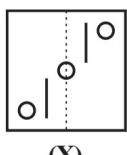
**Q.2** A figure of transparent sheet with a pattern is given below. Select the option that shows how the paper would appear when the transparent sheet is folded at the dotted line.



Questions figure

- (A) (B) (C) (D)

**Q.3** Find out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.



(X)

- (1) (2) (3) (4)

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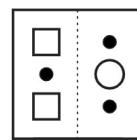
General Aptitude

Questions figure

- (A) (B) (C) (D)

**Q.7** A transparent square sheet shown below is folded along the dotted line. The folded sheet will look like \_\_\_\_\_.

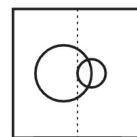
pattern is given in Figure. Find out from amongst the alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.



Questions figure

- (A) (B) (C) (D)

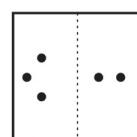
**Q.5** A square transparent sheet with a pattern is given in Figure. Find out from amongst the alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.



Questions figure

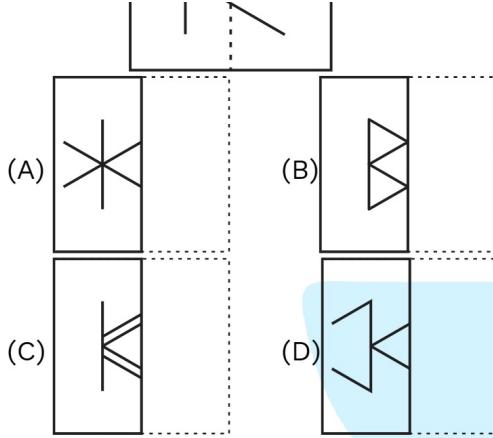
- (A) (B) (C) (D)

**Q.6** A square transparent sheet with a pattern is given in Figure. Find out from amongst the alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.

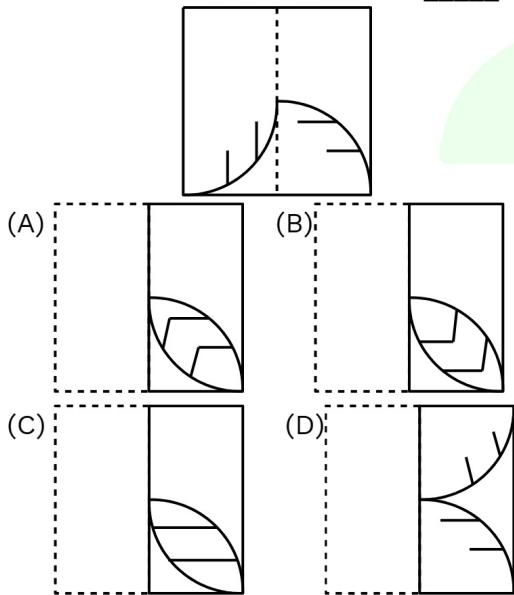


Questions figure

- (A) (B) (C) (D)

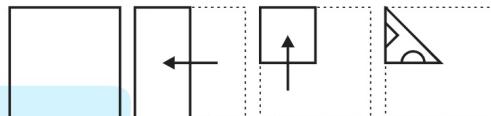


- [GATE 2021 : IIT-Bombay(EE)]**  
**Q.8** A transparent square sheet shown below is folded along the dotted line. The folded sheet will look like \_\_\_\_\_

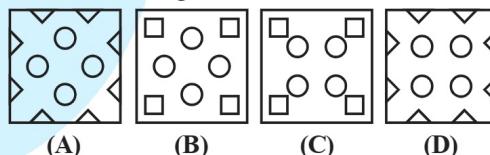


- [GATE 2021 : IIT-Bombay(CS-2)]**  
**Q.9** A piece of paper is folded and cut as shown below in the questions figures. Select from the given answer figure, how it will appear when unfolded.

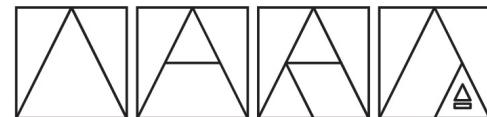
- Q.10** A piece of paper is folded and punched as shown below in the question figure. From the given answer figure, indicate how it will appear when opened.



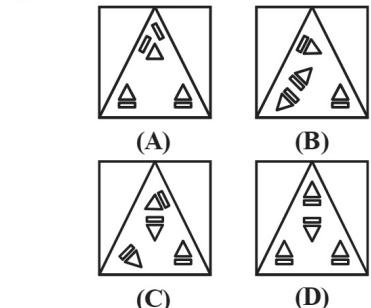
Questions figure



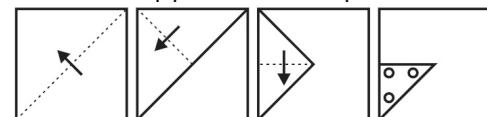
- Q.11** A piece of paper is folded and cut as shown below in the question figures. From the given answer figure, indicate how it will appear when opened.



Questions figure



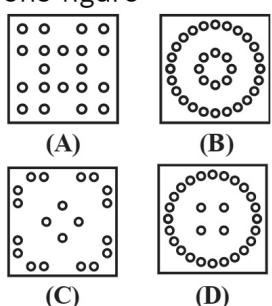
- Q.12** A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened?



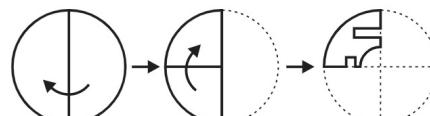
91

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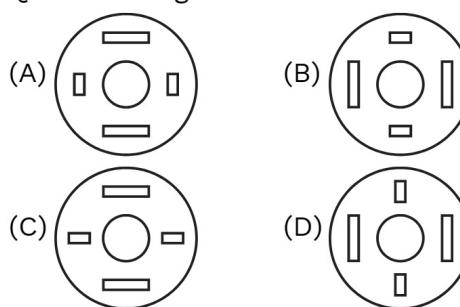
Questions figure

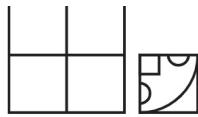


- Q.13** A piece of paper is folded and cut as shown below in the question figures. From the given answer figure, indicate how it will appear when opened.

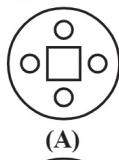


Questions figure





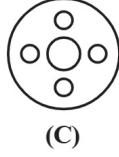
Questions figure



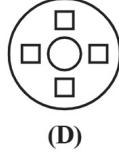
(A)



(B)

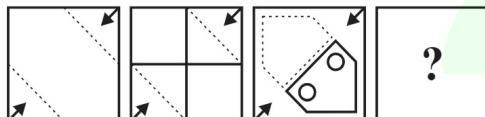


(C)



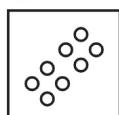
(D)

- Q.14** A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened?

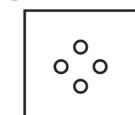


?

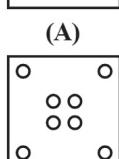
Questions figure



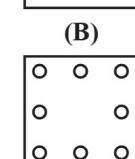
(A)



(B)



(C)



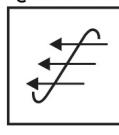
(D)

- Q.15** A circular sheet of paper is folded along the lines in the directions shown. The paper, after being punched in the final folded state as shown and unfolded in the reverse order of folding, will look like\_\_\_\_\_.

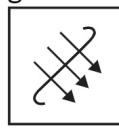
- Q.3** If a mirror placed on the line MN, then which of the answer figure is the correct image of the question figure?



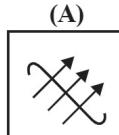
Questions figure



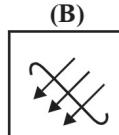
(A)



(B)



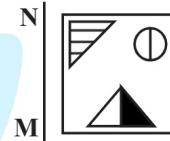
(C)



(D)

## 12.2 Mirror Images

- Q.1** If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure?



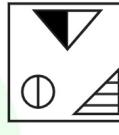
Questions figure



(A)



(B)

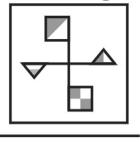


(C)



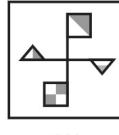
(D)

- Q.2** If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figures?

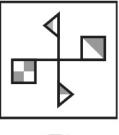


M N

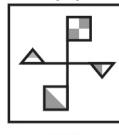
Questions figure



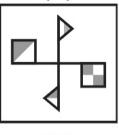
(A)



(B)



(C)



(D)

Questions figure



(A)



(B)



(C)



(D)

- Q.7** Choose the alternative which is closely resembles the water-image of the given combination?

NUCLEAR

(A) БАЕГСИИ

(B) ИЮСЛЯВ

(C) ИУСЛГЕАВ

(D) ИЮСЛГЕАВ

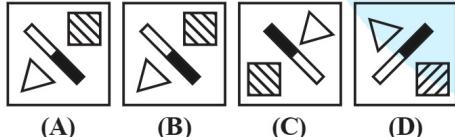
**Q.4**

(C) (D)  
If a mirror is placed on the line MN, then which of the answer figure is the right images of the given figure?

M  N



Questions figure



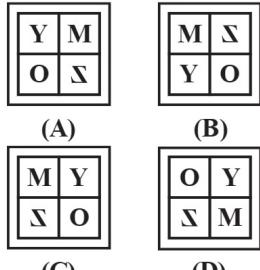
(A) (B) (C) (D)

**Q.5**

Which of the answer figures is exactly the mirror image of the given figure, when the mirror is held on the line AB?



Questions figure



(A) (B)  
(C) (D)

**Q.6**

If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure?



**Q.14**

Choose the alternative which is closely resembles the mirror image of the given combination?

1 9 6 5 I N D O P A K

- (A) 1 9 6 5 I N D O P A K  
(B) 5 6 9 1 0 D I N K A P  
(C) 1 6 9 5 I N D O P A K  
(D) 1 9 6 5 I N D O P A K

**Q.15**

Choose the alternative which is closely resembles the mirror image of the given combination?

A N 5 4 W M G 3 (A)  
A N 5 4 W M G 3 (A)

**Q.8**

Choose the alternative which is closely resembles the water-image of the given combination.?

**GR98AP76ES**

- (A) **GR98AP76ES** (B) **GR98AP76ES**  
(C) **GR98AP76ES** (D) **GR98AP76ES**

**Q.9**

Choose the alternative which is closely resembles the water-image of the given combination?

**E 8 t 4 e 9 C**

- (A) **C 9 e 4 t 4 E** (B) **C 9 e 4 t 4 E**  
(C) **E 8 t 4 e 9 C** (D) **E 8 t 4 e 9 C**

**Q.10**

Choose the alternative which is closely resembles the water-image of the given combination?

**a b 4 5 C D 6 7**

- (A) **a p 4 2 C D e 1** (B) **a p 4 2 C D e 1**  
(C) **a p 4 2 C D 6 1** (D) **a p 4 2 C D e 1**

**Q.11**

Choose the alternative which is closely resembles the water-image of the given combination?

**PQ8AF5BZ9**

- (A) **b08AF5BZ9** (B) **b08AF5BZ9**  
(C) **b08AF5BZ9** (D) **b08AF5BZ9**

**Q.12**

Choose the alternative which is closely resembles the water-image of the given combination?

**N 4 t Q j 3**

- (A) **N 4 t Q j 3** (B) **N 4 t Q j 3**  
(C) **N 4 t Q j 3** (D) **N 4 t Q j 3**

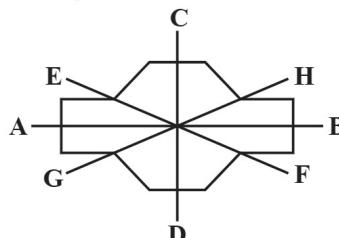
**Q.13**

Choose the alternative which is closely resembles the mirror image of the given combination?

**T A R A I N 1 0 1 4 A**

### 12.3 Figure Symmetry

**Q.1** Which of the following are the lines of symmetry?



- (A) AB and CD

- (B) EF and GH

- (C) All of the above

- (D) None of the above

**Q.2**

How many lines of symmetry can be drawn for given figure?

- (B) **AN 5 4 W M 3**  
 (C) **3 C W W 4**  
 (D) **AN 5 4 W M 3**

**Q.16** Choose the alternative which is closely resembles the mirror image of the given combination?

- D L 9 C G 4 7 2 8**  
 (A) **8 2 7 4 G C 9 L D**  
 (B) **D L 9 C G 4 7 2 8**  
 (C) **D L 9 C G 4 7 2 8**  
 (D) **D L 9 C G 4 7 2 8**

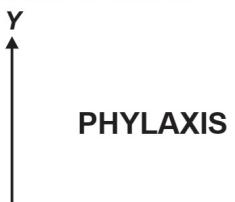
**Q.17** The mirror image of the above text about the X-axis is



- (A) **ELGNIAHT** (B) **TBIANIGLE**  
 (C) **ELGNIAHT** (D) **TBIANIGLE**

[GATE 2021 : IIT-Bombay (IN, CE-1)]

**Q.18** The mirror image of the above text about the X-axis is

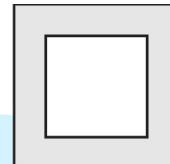
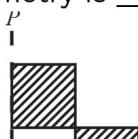


- (A) **RHYLAXIS** (B) **SIXAHLYH**  
 (C) **bHAYLXIS** (D) **SIXAHLYH**

[GATE 2021 : IIT-Bombay (CE-2)]

- (A) 06 (B) 05  
 (C) 04 (D) 07

**Q.7** The least number of squares that must be added so that the line P-Q becomes the line of symmetry is \_\_\_\_.



Questions figure

- (A) 01 (B) 02  
 (C) 04 (D) 06

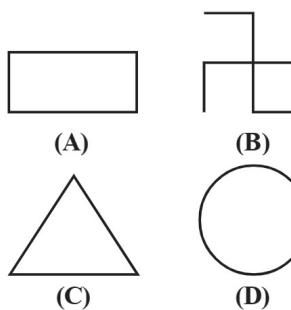
**Q.3** How many capital letters of English alphabets have both vertical line of symmetry?

- (A) 04 (B) 06  
 (C) 05 (D) 03

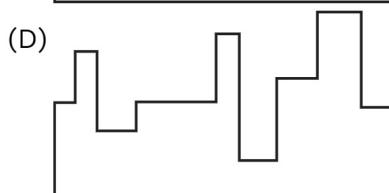
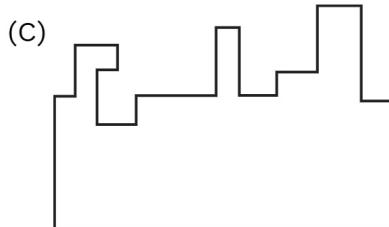
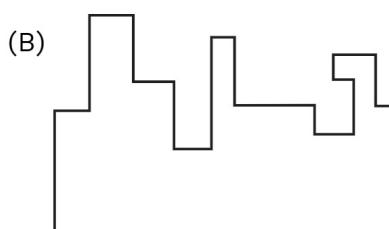
**Q.4** What letters of the English alphabet have reflectional symmetry (i.e., symmetry related to mirror reflection) about a vertical mirror.

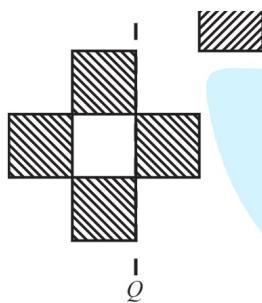
- (A) 11 (B) 09  
 (C) 10 (D) 12

**Q.5** In the following figures, the figure that is not symmetric with respect to any line is :



**Q.6** How many circles are needed to make line PQ symmetric?

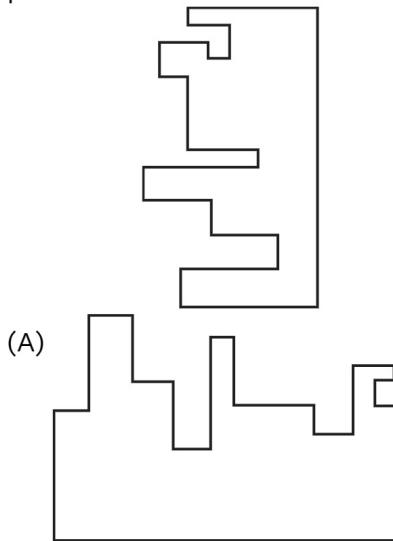






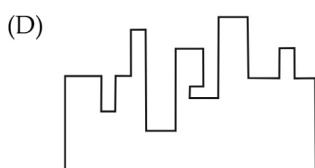

[GATE 2021 : IIT-Bombay (EC)]

- Q.8** A jigsaw puzzle has 2 pieces. One of the pieces is shown above. Which one of the given options for the missing piece when assembled will form a rectangle? The piece can be moved, rotated or flipped to assemble with the above piece.



## General Aptitude

95

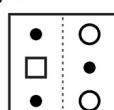


[GATE 2021 : IIT-Bombay (CS-2)]

## **12.1 Paper Folding & Cutting**

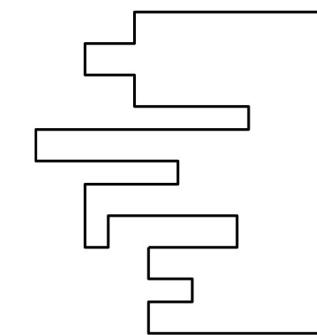
- Q.1** A figure of transparent sheet with a pattern is given below. Select the option that shows how the paper would appear when the transparent sheet is folded at the dotted line.

## Problem Figure



[GATE 2021 : IIT-Bombay (ME-1)]

- Q.9** A jigsaw puzzle has 2 pieces. One of the pieces is shown above. Which one of the given options for the missing piece when assembled will form a rectangle? The piece can be moved, rotated or flipped to assemble with the above piece.



- 

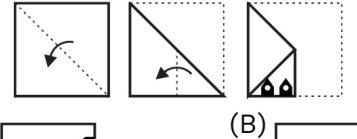
## Practice Questions

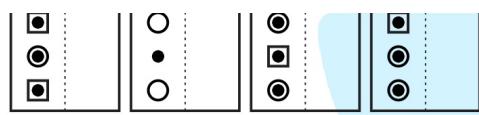
## **12.1 Paper Folding & Cutting**

- Q.1** A figure of transparent sheet with a pattern is given below. Select the option that shows how the paper would appear when the transparent sheet is folded at the dotted line.



**Q.4** Question figure :

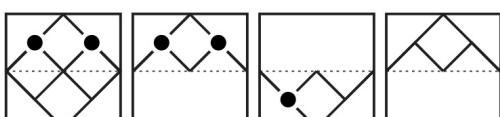
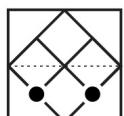




- (A) B  
(C) D  
(B) C  
(D) A

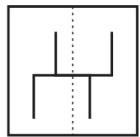
**Q.2** A figure of transparent sheet with a pattern is given below. Select the option that shows how the paper would appear when the transparent sheet is folded at the dotted line.

Problem figure



- (A) B  
(C) D  
(B) C  
(D) A

**Q.3** A figure of transparent sheet with a pattern is given below. Select the option that shows how the paper would appear when the transparent sheet is folded at the dotted line.

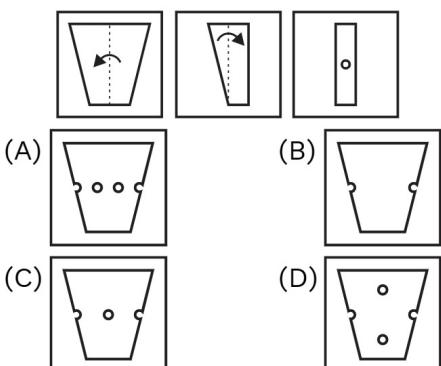


96

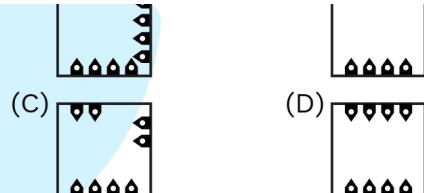
General Aptitude



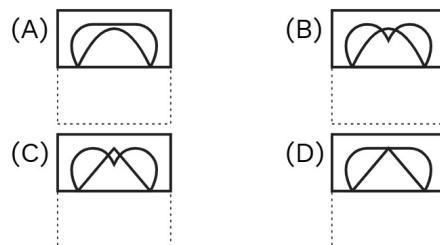
**Q.7** A paper is folded and cut as shown below. How will it appear when unfolded?



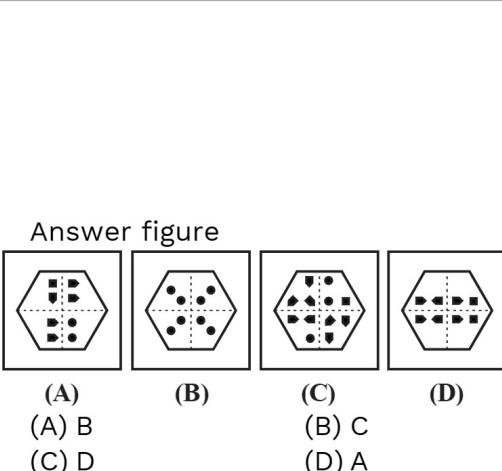
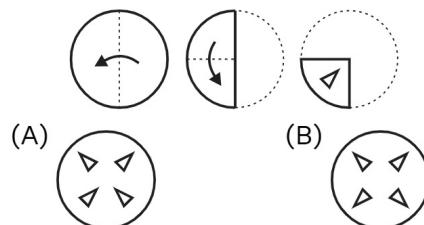
**Q.8** A paper is folded and cut as shown below. How will it appear when unfolded?



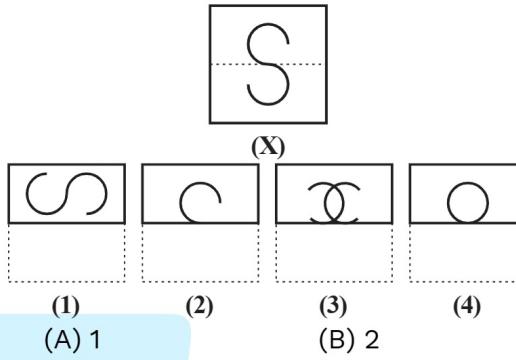
**Q.5** A figure of transparent sheet with a pattern is given below. Select the option that shows how the paper would appear when the transparent sheet is folded at the dotted line.

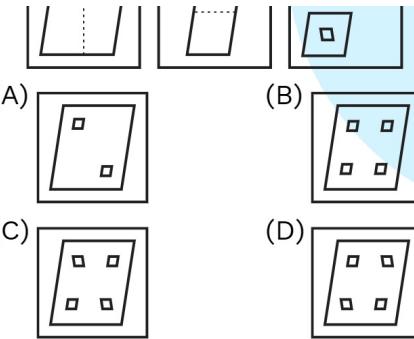


**Q.6** A paper is folded and cut as shown below. How will it appear when unfolded?

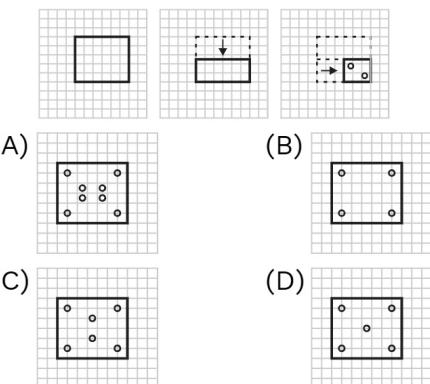


**Q.11** Find out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.

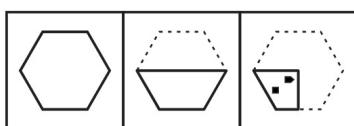




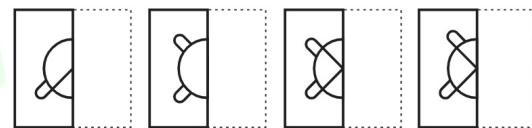
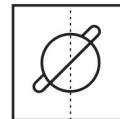
- Q.9** A paper is folded and cut as shown below. How will it appear when unfolded?



- Q.10** A paper is folded and cut as shown below. How will it appear when unfolded?

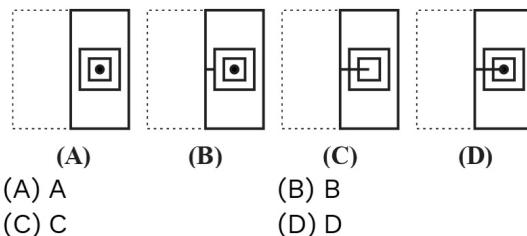
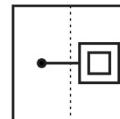


- Q.12** (C) 3 (D) 4  
Find out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.

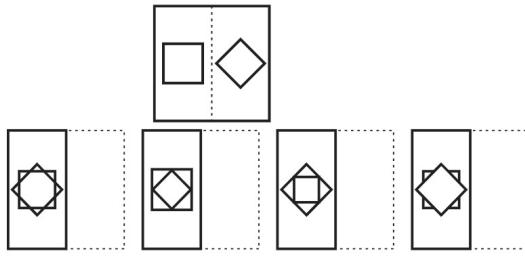


- (A) A (B) B  
(C) C (D) D

- Q.13** Find out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.

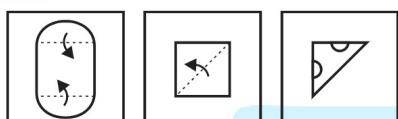


- Q.14** Find out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.



- (A) A (B) B  
(C) C (D) D

- Q.15** A piece of paper is folded and punched as shown. Indicate how it is when opened?



Options :



- (A) **DIESER** (B) **LESEID**  
(C) **DIESER**

- Q.3** Select the appropriate water image for the given question from the following options :

#### AGOUTI

- (A) **ITUODA** (B) **ITUODA**  
(C) **ACOUTI** (D) **AGOUTI**

- Q.4** Select the appropriate water image for the given question from the following options :

#### CROW

- (A) **CROW** (B) **CROM**  
(C) **CROW** (D) **CROM**

- Q.5** Select the appropriate water image for the given question from the following options :

#### BABOON

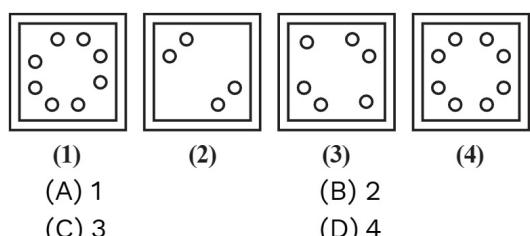
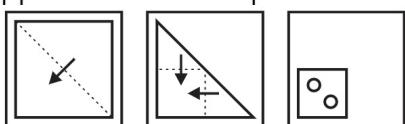
- (A) **BABOON** (B) **BABOON**  
(C) **BABOON** (D) **BABOON**

- Q.6** If you put a mirror on the shaded line,



- (A) 1      (B) 2  
(C) 3      (D) 4

**Q.16** Appear when it is opened?



- (A) 1      (B) 2  
(C) 3      (D) 4

## 12.2 Mirror Images

**Q.1** Select the appropriate water image for the given question from the following options :

**ALPACA**

- (A) **ACAPLA**      (B) **ALPACA**  
(C) **ACALILA**      (D) **ACALA**

**Q.2** Select the appropriate water image for the given question from the following options :

**DIESEL**

which of the following options would be the right image of the given figure?

**LATVIA**

- (A) **LATVIA**      (B) **LAIVTA**  
(C) **AIVTAL**      (D) **LATVIA**

**Q.7**

If you put a mirror on the shaded line, which of the following options would be the right image of the given figure?

**FRANCE**

- (A) **FRANCE**      (B) **FRANC**  
(C) **FRANCE**      (D) **FRANGCE**

**Q.8**

If you put a mirror on the shaded line, which of the following options would be the right image of the given figure?

**PELICAN**

- (A) **PELICAN**      (B) **PELICAN**  
(C) **DELICAN**      (D) **PELICAN**

**Q.9**

If you put a mirror on the shaded line, which of the following options would be the right image of the given figure?

**WASP**

- (A) **WASP**      (B) **SWAS**  
(C) **WASp**      (D) **WASeP**

**Q.10** If you put a mirror on the shaded line, which of the following options would be the right image of the given figure?

**MONKEY**

- (A) **MONKEY**      (B) **YENOKIM**  
(C) **MONKEY**      (D) **MONKEY**

## Answer Key

### Classroom Questions

#### 12.1 Paper Folding & Cutting

1.	C	2.	C	3.	B	4.	C	5.	A
6.	D	7.	C	8.	B	9.	B	10.	A
11.	B	12.	B	13.	B	14.	A	15.	A

#### 12.2 Mirror Image

1.	B	2.	C	3.	D	4.	D	5.	C
6.	C	7.	D	8.	C	9.	D	10.	B
11.	D	12.	A	13.	D	14.	D	15.	B
16.	C	17.	B	18.	C				

#### 12.3 Figure Symmetry

1.	C	2.	C	3.	A	4.	C	5.	B
6.	A	7.	C	8.	B	9.	B		

### Practice Questions

#### 12.2 Mirror Image

1.	D	2.	A	3.	B	4.	D	5.	D
6.	B	7.	A	8.	D	9.	D	10.	D

#### 12.1 Paper Folding & Cutting

1.	B	2.	A	3.	B	4.	A	5.	C
6.	D	7.	A	8.	D	9.	A	10.	A
11.	D	12.	D	13.	D	14.	A	15.	A
16.	A								

□□□

## 13

## Verbal Ability & Verbal Grammar

### 13.1 Sentence Completion

- Q.1** She hadn't eaten all day, and by the time she got home she was \_\_\_\_\_.  
 (A) blighted                    (B) confutative  
 (C) ravenous                   (D) ostentatious  
 (E) blissful
- Q.2** The movie offended many of the parents of its younger viewers by including unnecessary \_\_\_\_\_ in the dialogue.  
 (A) Vulgarity                   (B) Verbosity  
 (C) Vocalizations              (D) Tonality
- Q.3** His neighbours found his \_\_\_\_\_ manner bossy and irritating, and they stopped inviting him to backyard barbeques.  
 (A) Insentient                   (B) Magisterial  
 (C) Restorative                (D) Modest
- Q.4** The two-child norm with \_\_\_\_\_ for the violators will have significant

(A) foresee ... benevolent

(B) presage ... deleterious

(C) prognosticate ... healthful

(D) refute ... noxious

**Q.8** Oscar \_\_\_\_\_ the laundry right now.

(A) is making                   (B) is being

(C) is doing                     (D) is having

**Q.9** The \_\_\_\_\_ woman has grey hair and many wrinkles. She was born many years ago.

(A) strong                      (B) young

(C) old                          (D) kind

**Q.10** Unlike Bermuda, which has a \_\_\_\_\_ climate, Minnesota is often \_\_\_\_\_, especially in the winter.

(A) breezy ... windy

(B) stormy ... unpredictable

(C) warm ... humid

(D) tropical ... frigid

implications for our demographic profile.  
(A) Disincentives (B) Incitements  
(C) Restrictions (D) Restraints

**[GATE 2010 : IIT Guwahati]**

- Q.5** Suresh's dog is the one \_\_\_\_\_ was hurt in the stampede.  
(A) That (B) Which  
(C) Who (D) Whom

**[GATE 2012 : IIT Delhi]**

- Q.6** The author's first novel had such a \_\_\_\_\_ story that critics quickly dismissed the author as a \_\_\_\_\_.  
(A) hackneyed ... professional  
(B) suspenseful ... poseur  
(C) transparent ... scamp  
(D) trite ... hack

- Q.7** In making the decision on whether to drop the atomic bomb, President Truman attempted to \_\_\_\_\_ the weapon's \_\_\_\_\_ effects, ultimately deciding that ending World War II outweighed the harmful consequences he imagined.

**Q.11** After living in a \_\_\_\_\_ for many years, Pete realized he needed a change and decided to retire to a small cottage in a quiet, \_\_\_\_\_ town.

- (A) town ... familiar  
(B) village ... tiny  
(C) metropolis ... country  
(D) house ... soothing

**Q.12** Jacob's mother and father both had to \_\_\_\_\_ him from his sleep because he had slept through his alarm.

- (A) Rouse (B) Fluctuate  
(C) Lull (D) Tremble

**Q.13** The coach just wanted Sara to \_\_\_\_\_ the new technique, so she was upset when Sara refused to \_\_\_\_\_ it.

- (A) Explain ... learn  
(B) Perform ... enjoy  
(C) Try ... attempt  
(D) Examine ... understand

**Q.14** Food prices \_\_\_\_\_ again this month.  
(A) Have raised  
(B) Have been raising

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- (C) Have been rising  
(D) Have arose.

**[GATE 2012 : IIT Delhi]**

- Q.15** Some people \_\_\_\_\_ themselves into believing that, they are the only honest and hardworking employees in the company.  
(A) Keep (B) Fool  
(C) Delude (D) Force

- Q.16** Rajesh, two of \_\_\_\_\_ brothers play cricket, wishes to be a coach after his retirement.  
(A) Whom (B) Which  
(C) Them (D) Whose

- Q.17** Even a \_\_\_\_\_ glance will let you catch the mistake.  
(A) Crude (B) Curious  
(C) Cursory (D) Prefers

- Q.18** \_\_\_\_\_ students whether from primary or secondary divisions struggle to understand mathematics.  
(A) The large number of  
(B) A large number of  
(C) Large  
(D) More

- Q.19** I thought over this decision to a great

**Q.22** Choose the most appropriate word(s) from the options given below to complete the following sentence.

**I contemplated \_\_\_\_\_ Singapore for my vacation but decided against it.**

- (A) To visit (B) Having To Visit  
(C) Visiting (D) For A Visit

**[GATE 2011 : IIT Madras (CSE, ME, CE)]**  
**Q.23** Research in the workplace reveals that people work for many reasons \_\_\_\_\_.  
(A) Money beside  
(B) Beside money  
(C) Money besides  
(D) Besides money

- [GATE 2017 : IIT Roorkee (EE, CS Set – 1)]**  
**Q.24** Choose the most appropriate pair of words from the options given below to complete the following sentence.

**She could not \_\_\_\_\_ the thought of \_\_\_\_\_ the election to her bitter rival.**

- (A) Bear, loosing (B) Bare, loosing  
(C) Bear, losing (D) Bare, losing

**[GATE 2014 : IIT Kharagpur (EC Set - 2, ME Set - 2)]**

- length after we \_\_\_\_\_ it the other day.  
 (A) discussed  
 (B) discussed about  
 (C) discussed regarding  
 (D) discussed on
- Q.20** My coach is one of the best coaches \_\_\_\_\_.  
 (A) that I know  
 (B) I know  
 (C) who I know  
 (D) which I know

- Q.21** Choose the most appropriate word from the options given below to complete the following sentence:

**His rather casual remarks on politics** \_\_\_\_\_ **his lack of seriousness about the subject.**

- (A) Masked                    (B) Belied  
 (C) Betrayed                (D) Suppressed

**[GATE 2010 : IIT Guwahati (CSE, EE, ME, CE, EC, IN)]**

- Q.28** “By giving him the last \_\_\_\_\_ of the cake, you will ensure lasting \_\_\_\_\_ in our house today.”  
 The words that best fill the blanks in the above sentence are  
 (A) peas, piece            (B) piece, peace  
 (C) peace, pieces        (D) peace, peas

**[GATE 2018 : IIT Guwahati (EC Set – 1)]**

- Q.29** “His face \_\_\_\_\_ with joy when the solution of the puzzle was \_\_\_\_\_ to him.”  
 The words that best fill the blanks in the above sentence are

- (A) Shone, shown        (B) Shone, shone  
 (C) Shown, shone        (D) Shown, shown

**[GATE 2018 : IIT Guwahati (CE Set – 2)]**

- Q.30** Choose the most appropriate word from the options given below to complete the following sentence:

**If we manage to \_\_\_\_\_ our natural resources, we would leave a better planet for our children.**

- (A) Uphold                (B) Restrain  
 (C) Cherish              (D) Conserve

**[GATE 2010 : IIT Guwahati (CSE, ME, EE, EC, CE)]**

- Q.25** Choose the most appropriate word from the options given below to complete the following sentence the official answered \_\_\_\_\_ that the complaints of the citizen would be looked into.

- (A) Respectably            (B) Respectfully  
 (C) Reputably            (D) Respectively

**[GATE 2015 : IIT Kanpur (CE Set - 2)]**

- Q.26** The driver applied the \_\_\_\_\_ as soon as she approached the hotel where she wanted to take a \_\_\_\_\_.  
 (A) Brake, Break            (B) Break, Break  
 (C) Brake, Brake            (D) Break, Brake

**[GATE 2018 : IIT Guwahati (CE Set – 1)]**

- Q.27** “Although it does contain some pioneering ideas, one would hardly characterize the work as \_\_\_\_\_.  
 The word that best fills the blank in the above sentence is

- (A) Innovative            (B) Simple  
 (C) Dull                    (D) Boring

**[GATE 2018 : IIT Guwahati (CE Set – 2)]**

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

- (A) rational                (B) reasonable  
 (C) errant                  (D) good

**[GATE 2018 : IIT Guwahati (IN Set – 1)]**

- Q.34** Choose the appropriate word/phrase, out of the four options given below, to complete the following sentence:

**Apparent lifelessness** \_\_\_\_\_ **dormant life.**

- (A) Harbours              (B) Leads to  
 (C) Supports              (D) Affects

**[GATE 2015 : IIT Kanpur (ME Set – 3, IN)]**

- Q.35** 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

**[GATE 2012 : IIT Delhi (CSE, ME, CE)]**

### 13.2 Sentence Improvement

#### Directions for Questions 1 to 12

In each question, a part of the sentence is

**Q.31** Choose the most appropriate word from the options given below to complete the following sentence:  
**Under ethical guidelines recently adopted by the Indian Medical Association, human genes are to be manipulated only to correct diseases for which \_\_\_\_\_ treatments are unsatisfactory.**

- (A) Similar (B) Most  
(C) Uncommon (D) Available

**[GATE 2011 : IIT Madras (EC, EE)]**

**Q.32** "When she fell down the \_\_\_\_\_, she received many \_\_\_\_\_ but little help." The words that best fill the blanks in the above sentence are

- (A) stairs, stares (B) stairs, stairs  
(C) stares, stairs (D) stares, stares

**[GATE 2018 : IIT Guwahati (IN Set – 1)]**

**Q.33** "In spite of being warned repeatedly, he failed to correct his \_\_\_\_\_ behaviour."

underlined. Each sentence is followed by some phrases which can replace the underlined part to make it better. Choose the option that can correctly substitute that part of the sentence. If the sentence is correct as it, the answer is "No correction required" or "No improvement".

**Q.1** John is as fast as or perhaps faster than Sarah.

- (A) as fast  
(B) almost as fast  
(C) equally fast  
(D) No correction required

**Q.2** This worker is the most skilled of all the other workers in our factory.

- (A) worker  
(B) of all the others workers  
(C) of all workers  
(D) No improvement

**Q.3** The girl told her teacher to explain the whole lesson again.



- (A) Called her teacher  
(B) Said to her teacher  
(C) Asked her teacher  
(D) No improvement

**Q.4** The speaker of Lok Sabha broke away the meeting as it turned violent.  
(A) broke up  
(B) broke off  
(C) broke through  
(D) No improvement

**Q.5** The burning of coal in thermal electricity plants release dust particles and greenhouse gases that contribute to pollution.

- (A) Releases dust particles and greenhouse gases that  
(B) Release dust particle and greenhouse gases which  
(C) Releases dust particles and greenhouse gas that  
(D) No improvement

**Q.6** Newton explored the Laws of motion.  
(A) Decoded  
(B) Discovered  
(C) Invented  
(D) No improvement

**Q.7** The SIT made a request to sought permission to conduct NARCO test on

**Q.10** What were you doing ever since mom left?

- (A) Are you doing  
(B) Did you do  
(C) Have you been doing  
(D) No improvement

**Q.11** Neither do I nor does my brother tell lies.

- (A) Neither I live nor does  
(B) Neither I nor  
(C) Neither I do nor does  
(D) No improvement

**Q.12** I congratulated him because of his good performance in exams.

- (A) Due to  
(B) For  
(C) On  
(D) No improvement

**Q.13** 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 the 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.

the convict.

- (A) To seeking permission
- (B) For seeking permission
- (C) Seeking permission
- (D) No improvement

**Q.8** Had you been told father about your difficulties; he would have helped you find a solution.

- (A) Had you told
- (B) If you have told
- (C) Had you have told
- (D) No improvement

**Q.9** The analyst said that since the rate of gold would go up, the cost of ornaments is also increasing

- (A) Would also increase
- (B) Will increased
- (C) Will be also increasing
- (D) No improvement

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- (C) Our team would win the competition only if we had concentrated.

- (D) Our team had won the competition if only we would have concentrated.

**Q.2** (A) She came in too quickly to avoid waking her child.  
(B) She entered in quickly, so as not to wake her child.  
(C) Having not to wake her child, she came in quickly.  
(D) She came in very quickly so that she might avoid waking her child.

**Q.3** (A) Many trains must stop owing to floods, if the rains last till the weekend.

- (B) If the rains last for the weekend, owing to floods, many trains must stop.

- (C) Owing to floods, many trains must stop if the rains last over the weekend.

- (D) Having the rains lasting to the weekend, many trains must stop.

**Q.4** (A) People are rather impressed by the style of dressing than by a person's character.

- (B) People are impressed rather by the style of dressing than by a person's

- (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

**[GATE 2015 : IIT Kanpur (EC Set - 1)]**

### 13.3 Sentence Correction

#### Directions for Questions 1 to 10

In each of the following questions, select the most preferable sentence with respect to grammar, meaning and usage.

**Q.1** (A) Our team had won the competition if only we would have concentrated.  
(B) Our team would have won the competition if only we had concentrated.

- (B) Travelling from kulumanali to shimla, one finds the line most beautifully laid.

- (C) While travelling from kulumanali to shimla, one would find the line most beautifully laid.

- (D) If one travels from kulumanali to shimla, he will find the line beautifully laid.

**Q.7** (A) Being two years completed, Sahil will be working in this office till May next.

- (B) Till May next year, Sahil will work in the office for two years.

- (C) By May next year, Sahil will have been working in the office for two years.

- (D) Sahil will be working in this office upon completing two years by next May.

**Q.8** (A) I went yesterday to the school to collect the Leaving certificate.

- (B) To collect the Leaving certificate yesterday, I went to the school.

- (C) Yesterday to collect the Leaving certificate I went to the school.

- (D) I went to the school yesterday to collect the Leaving certificate.

**Q.9** (A) There will be a meeting in the long

character.

- (C) Rather people are impressed by the style of a dressing than by a person's character.  
(D) People are impressed by the style of dressing than by a person's character.

- Q.5** (A) In four bomb-blasts, fortunately only three lives were lost.  
(B) In a four bomb-blasts only three lives were fortunately lost.  
(C) Fortunately, in four bomb-blasts, only three lives were lost.  
(D) In fortunately four bomb-blast, only three lives were lost
- Q.6** (A) As one travels from Kulumanali to Shimla, he finds the line most beautifully laid.

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- (D) Scarcely had the rains begun than this waterfall becomes very beautiful.

- Q.11** Which of the following options is the closest in meaning to the sentence below?  
She enjoyed herself immensely at the party.  
(A) She had a terrible time at the party.  
(B) She had a horrible time at the party.  
(C) She had a terrific time at the party  
(D) She had a terrifying time at the party

**[GATE 2015 : IIT Kanpur  
(CSE Set - 1, EE Set - 1)]**

- Q.12** Ram and Shyam shared a secret and promised to each other that it would remain between them. Ram expressed himself in one of the following ways as given in the choices below. Identify the correct way as per standard English.  
(A) It would remain between you and me.  
(B) It would remain between I and you  
(C) It would remain between you and I  
(D) It would remain with me.

**[GATE 2015 : IIT Kanpur  
(EC Set - 3, ME Set - 2)]**

- Q.13** Choose the grammatically CORRECT sentence  
(A) Two and two add four

room at 11 o' clock of all the students who play badminton.

- (B) There will be a meeting of all the students who play badminton in the long room at 11 o' clock.  
(C) There will be in the long room at 11 o' clock a meeting of all the students who play badminton.  
(D) In the long room, at 11 o' clock there will be a meeting of all the students who play badminton.

- Q.10** (A) As soon as rains begin than this waterfall will look very beautiful.  
(B) As soon as the rains begin this waterfall will look very beautiful  
(C) No sooner did the rains begin than this waterfall will look very beautiful.

- Q.15** “India is a country of rich heritage and cultural diversity”.  
Which one of the following facts best supports the claim made in the above sentence?  
(A) India is a union of 28 states and 7 union territories.  
(B) India has a population of over 11 billion.  
(C) India is home to 22 official languages and thousands of dialects.  
(D) The Indian cricket team draws players from over ten states.

**[GATE 2014 : IIT Kharagpur  
(EC Set - 3, ME Set - 3)]**

- Q.16** Out of the following four sentences, select the most suitable sentence with respect to grammar and usage.  
(A) Since the report lacked needed information, it was of no use to them.  
(B) The report was useless to them because there were no needed information in it.  
(C) Since the report did not contain the needed information, it was not real useful to them  
(D) Since the report lacked needed information, it would not have been useful to them.

- (B) Two and two become four
- (C) Two and two are four
- (D) Two and two make four

**[GATE 2013 : IIT Bombay (EC, EE, IN)]**

- Q.14** Which of the following options is the closest in meaning to the sentence below?

- “As a woman, I have no country.”
- (A) Women have no country
  - (B) Women are not citizens of any country.
  - (C) Women's solidarity knows no national boundaries
  - (D) Women of all countries have equal legal rights.

**[GATE 2014 : IIT Kharagpur (CE Set – 2, IN)]**

### 13.4 Idioms and Phrases

#### Directions for Questions 1 to 8

Choose the alternative that best expresses the meaning of the given idiom.

- Q.1** To talk one's head off

- (A) To shout loudly
- (B) To talk in whispers
- (C) To talk to oneself
- (D) To talk excessively

- Q.2** To save one's face

- (A) To hide oneself
- (B) To oppose
- (C) To evade disgrace
- (D) To protect

- Q.11** Try to end your dependency on alcohol otherwise you'll end in smoke one day.

- (A) Ruin yourself completely
- (B) Become the victim
- (C) Die
- (D) Loose all your money

- Q.12** Inspite of the immense pressure by the opposition, the ruling party, has decided not to give in.

- (A) Conform
- (B) Accede
- (C) Oblige
- (D) Yield

- Q.13** Being an introvert that he is wearing his heart on his sleeves is not possible to him.

- (A) Talking endlessly
- (B) Saying something which can't be taken seriously
- (C) Being friendly with others
- (D) Exposing innermost feelings to others

- Q.14** I did not even listen to him, he was only talking through his hat.

- (A) Talking ignorantly
- (B) Talking non-stop
- (C) Talking garrulously
- (D) Talking nonsense

- Q.15** The thieves took to heels as they heard the siren.

- (A) Moved back
- (B) Ran away

#### Directions for Questions 9 to 20

Choose the option that best describes the meaning of the idioms and phrases underlined in the given sentences.

- Q.9** After facing all the hardships, I'm happy to see that you have turned a new leaf.

(A) Proved to be successful  
(B) Stayed strong  
(C) Begun a different mode of life  
(D) Applied common sense

**Q.10** The rich and the poor sat cheek by jowl in the rescue ferry.

(A) Separately  
(B) Very near  
(C) Irritated  
(D) Very far

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- (A) Stopped  
(B) Failed  
(C) Turned upside down  
(D) Fell flat

**Q.19** Nobody takes Reema's complains seriously as she is a cry wolf.  
(A) Raises false alarms  
(B) Selfish  
(C) Always keeps crying  
(D) Always complaining

**Q.20** This project is a Gordian knot.  
(A) Ordinary project  
(B) Big project  
(C) Easy job  
(D) Difficult job

**Q.21** Select the alternative meaning of the underlined part of the sentence. The chain snatchers took to their heels when the police party arrived.  
(A) Took shelter in a thick jungle  
(B) Open indiscriminate fire  
(C) Took to flight  
(D) Unconditionally surrendered

[GATE 2015 : IIT Kanpur]  
[EE Set - 1, CSE Set - 1]

- Q.22** After India's cricket world cup victory in 1983, Shrotriya who was playing both tennis and cricket till then, decided to concentrate only on cricket. And the rest is history.

What does the underlined phrase mean in this context?

(A) history will rest in peace

- (C) Took off their shoes  
(D) Put on the shoes

**Q.16** I cannot put up with your insulting behaviour now.  
(A) Refuse                    (B) Accept  
(C) Excuse                    (D) Tolerate

**Q.17** The mob outside the police station was up in arms against the recent incidence of child abuse.  
(A) Vandalising the check post  
(B) Pained  
(C) Shouting slogans  
(D) Angry

**Q.18** The bus sped and turned turtle in the ditch.



What did the minister convey by the statement?

- (A) He wants all the money
  - (B) He will return the money
  - (C) He will assume final responsibility
  - (D) He will resist all enquiries

[GATE 2014 : IIT Kharagpur]  
(CSE Set - 1, EE Set - 1)]

## 13.5 Synonyms & Antonyms

**Directions for Questions 1 to 10**

In each of the questions below, choose the word opposite in meaning to the given word.

- (B) rest is recorded in history books
  - (C) rest is well known
  - (D) rest is archaic

**[GATE 2016 : IISc Bangalore  
(EC Set – 2, ME Set – 3)]**

**Q.23** He turned a deaf ear to my request.  
What does the underlined phrasal verb mean?

- (A) Ignored                          (B) Appreciated  
(C) Twisted                           (D) Returned

[GATE 2016 : IISc Bangalore (CE Set-2)]

**Q.24** In a press meet on the recent scam, the minister said, "The buck stops here".



- Q.11** Perpetuate  
(A) Halt (B) Neglect  
(C) Maintains (D) Let go

**Q.12** Mendicant  
(A) Reformer (B) Advisor  
(C) Beggar (D) Dealer

**Q.13** Privy  
(A) Obvious (B) Known  
(C) Secret (D) Candid

**Q.14** Frivolous  
(A) Sensible (B) Silly  
(C) Wise (D) Supported

**Q.15** Asperity  
(A) Mild (B) Civil  
(C) Polite (D) Harshness

**Q.16** Monument  
(A) Epitaph (B) Memorial  
(C) Tomb (D) Mausoleum

**Q.17** Insurmountable  
(A) Defeatable (B) Reachable  
(C) Impossible (D) Attainable

**Q.18** Soporific  
(A) Lethargic (B) Happy  
(C) Terrifying (D) Alert

**Q.19** Doleful  
(A) Mournful (B) Regretful  
(C) Cheerless (D) Sober

**Q.20** Squander  
(A) Procure (B) Hoard  
(C) Save (D) Misuse

**Q.21** Which of the following options closest in meaning to the word given below

- Q.8** Reap  
(C) Reap  
(D) Water

**Q.8** Subsume  
(A) Hold  
(B) Exclude  
(C) Enclose  
(D) Classify

**Q.9** Fickle  
(A) Quick  
(B) Erratic  
(C) Constant  
(D) Volatile

**Q.10** Conformity  
(A) Distraction  
(B) Dilution  
(C) Deviation  
(D) Diversio

**Directions for Questions 11 to 20**

In each of the questions below, choose the word that best expresses the meaning of the given word.

- (A) Incomprehensible
  - (B) Indelible
  - (C) Inextricable
  - (D) Infallible

[GATE 2011 : IIT Madras (CSE, ME, CE)]

**Q.24** There was no doubt that their work was thorough.

- Which of the words below is closest in meaning to the underlined word above?

(A) Pretty                  (B) Complete  
(C) Sloppy                (D) Haphazard

[GATE 2017 : IIT Roorkee (IN, CE Set - 2)]

**Q.25** 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

**[GATE 2012 : IIT Delhi (BT, ME, CE)]**

**Q.26** The word similar in meaning to 'dreary' is

- (A) Cheerful                          (B) Dreamy  
(C) Hard                              (D) Dismal

[GATE 2015 : IIT Kanpur (CE Set - 2)]

**Q.27** Which one of the following option is the closest in meaning to the word given below

- Latitude  
(A) Eligibility      (B) Freedom  
(C) Coercion        (D) Meticulousness

[GATE 2012 : IIT Delhi (EC, EE, IN)]

**Q.28** Which of the following options is closest in meaning to the word given below?

## “Primeval”

**[GATE 2013 : IIT Bombay (CSE, ME)]**

- Q.22** Which of the following options is closest in meaning to the word Circuitous.  
 (A) Cyclic (B) Indirect  
 (C) Confusing (D) Crooked

**[GATE 2010 : IIT Guwahati (EC, EE, ME, IN, CE, CSE)]**

- Q.23** Which of the following options is the closest in the meaning to the word below :  
**Inexplicable**

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- (A) Modern (B) Historic  
 (C) Primitive (D) Antique

**[GATE 2013 : IIT Bombay (CE)]**

- Q.29** Which of the following options is the closest in meaning to the phrase underlined in the sentence below?  
 It is fascinating to see life forms cope with varied environmental conditions.  
 (A) Adopt to (B) Adapt to  
 (C) Adept in (D) Accept with

**[GATE 2014 : IIT Kharagpur (CSE Set -1, EE Set-1)]**

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- Q.30** While receiving the award, the scientist said, "I feel vindicated". Which of the following is closest in meaning to the word 'vindicated'?  
 (A) Punished (B) Substantiated  
 (C) Appreciated (D) Chastened

**[GATE 2014 : IIT Kharagpur (EC Set -4, ME Set-4)]**

- Q.31** Choose the word that is opposite in meaning to the word "coherent".  
 (A) Sticky (B) Well-connected  
 (C) Rambling (D) Friendly

**[GATE 2014 : IIT Kharagpur (EE) (CSE Set -3, EE Set-3)]**

- Q.32** Which word is not a synonym for the word vernacular?  
 (A) Regional (B) Indigeneous  
 (C) Indigent (D) Colloquial

**[GATE 2015 : IIT Kanpur (CE Set- 2)]**

- Q.33** The Buddha said, "Holding on to anger is like grasping a hot coal with the intent of throwing it at someone else; you are the one who gets burnt." Select the word below which is closest in meaning to the word underlined above.  
 (A) Burning (B) Igniting  
 (C) Clutching (D) Flinging

**[GATE 2016 : IISc Bangalore (EC Set – 3, IN)]**

- Q.34** Choose the option with words that are not synonyms.  
 (A) Aversion, dislike  
 (B) Luminous, radiant  
 (C) Plunder, loot  
 (D) Yielding, resistant

**[GATE 2017 : IIT Roorkee (EE, CS Set – 2)]**

- Q.35** Match the columns :

**Column 1****Column 2**

- Q.36** Which of the following options is closest in meaning to the word given below

**VERNACULAR**

- (A) Faulty speech  
 (B) Language of a locality  
 (C) Foreign accent  
 (D) Gibberish

**[GATE 2019 : IIT Madras (EE)]**

- Q.37** Which of the following options is closest in meaning to the word given below

**Puerile**

- (A) Humorous (B) Virtuous  
 (C) Childish (D) Whimsical

**[GATE 2019 : IIT Madras (ME)]****13.6 Spellings****Directions for Questions 1 to 2**

In each of the following questions, choose the correctly spelt word out of the given alternatives.

- Q.1** (A) Apalogy (B) Apollogie  
 (C) Appology (D) Apology

- Q.2** (A) Ceasar (B) Cizaer  
 (C) Cizar (D) Caesar

**Directions for Questions 3 to 12**

In the following questions, groups of four words are given. In each group one word is wrongly spelt. Find out the wrongly spelt word and mark the answer.

- Q.3** (A) Attendence (B) Providence  
 (C) Evidence (D) Preference

- Q.4** (A) Deleterious (B) Perseverence  
 (C) Inexorable (D) Bowdlerise

- Q.5** (A) Genarally (B) Normally  
 (C) Effectivly (D) Grandly

- |                        |                     |
|------------------------|---------------------|
| (1) Eradicate          | (P) Misrepresent    |
| (2) Distort            | (Q) Soak            |
|                        | Completely          |
| (3) Saturate           | (R) Use             |
| (4) Utilize            | (S) Destroy Utterly |
| (A) 1:S, 2:P, 3:Q, 4:R |                     |
| (B) 1:P, 2:Q, 3:R, 4:S |                     |
| (C) 1:Q, 2:R, 3:S, 4:P |                     |
| (D) 1:S, 2:P, 3:R, 4:Q |                     |

**[GATE 2014 : IIT Kharagpur  
(CSE Set -2, EE Set-2)]**

- |                |                   |                 |  |
|----------------|-------------------|-----------------|--|
| (U) LITERATURE |                   | (U) GRAMMAR     |  |
| <b>Q.6</b>     | (A) Genre         | (B) Obsene      |  |
|                | (C) Caliber       | (D) Cavil       |  |
| <b>Q.7</b>     | (A) Argument      | (B) Trickery    |  |
|                | (C) Comotion      | (D) Uproar      |  |
| <b>Q.8</b>     | (A) Agrendise     | (B) Squalid     |  |
|                | (C) Squeamish     | (D) Rudimentary |  |
| <b>Q.9</b>     | (A) Sympathetic   | (B) Generous    |  |
|                | (C) Compassionate | (D) Benevolent  |  |
| <b>Q.10</b>    | (A) Acquiesce     | (B) Acquire     |  |
|                | (C) Acquatic      | (D) Acquittal   |  |



- Q.11** (A) Manhandle      (B) Associate  
           (C) Bruere        (D) Traipse
- Q.12** (A) Therapeutic     (B) Barricade  
           (C) Thermometer   (D) Bureaucretic
- Q.13** Identify the correct spelling out of the given options :  
       (A) Manageable     (B) Manageble  
       (C) Mangaeble      (D) Managible

**[GATE 2016 : IISc Bangalore (EE Set - 2)]**

- Q.14** The policeman asked the victim of a theft, "What did you \_\_\_\_\_ ?  
       (A) Loose            (B) Lose  
       (C) Loss             (D) Louse

**[GATE 2016 : IISc Bangalore (EC Set - 1)]**

### 13.7 One Word Substitution

#### Directions for Questions 1 to 10

In each of the following questions, out of the four alternatives, choose the one which can be substituted for the given words/ sentence.

- Q.1** A short, amusing story about some real person or event is called as \_\_\_\_\_  
       (A) Myth             (B) Anecdote  
       (C) Fable            (D) Allegory
- Q.2** Act of bringing gentle and painless death from incurable disease is called as \_\_\_\_\_  
       (A) Suicide          (B) Fatality  
       (C) Euthanasia      (D) Gallows
- Q.3** A small enclosure for cattle, sheep, poultry etc. is called as \_\_\_\_\_  
       (A) Eyrie            (B) Sty  
       (C) Pen             (D) Lair
- Q.4** Music sung or played at night below a person's window is called as \_\_\_\_\_.  
       (A) Serenade        (B) Sonnet  
       (C) Lyric           (D) Primo
- Q.5** Anything written in a letter after it is

- Q.8** (C) Gloom            (D) On tenterhooks  
       A word that refers to small, fast, continuous shaking movement  
       (A) Oscillation     (B) Vibration  
       (C) Distillation    (D) Permutation
- Q.9** The act of walking slowly, wasting time  
       -  
       (A) Stagger          (B) Stride  
       (C) Dawdle          (D) Plod
- Q.10** A person who easily gives up his party  
       (A) Turntake        (B) Turncoat  
       (C) Turnover       (D) Turnaround
- Q.11** A rewording of something written or spoken is a \_\_\_\_\_.  
       (A) Paraphrase      (B) Paradox  
       (C) Paradigm       (D) Paraffin

**[GATE 2016 : IISc Bangalore (CE Set - 1)]**

- Q.12** A generic term that include various items of clothing such as a skirt, a pair of trousers and a shirt is  
       (A) Fabric           (B) Textile  
       (C) Fibre           (D) Apparel

**[GATE 2015 : IIT Kanpur  
(CSE Set - 2, EE Set - 2)]**

### 13.8 Error Finding

#### Directions for Questions 1 to 10

Every sentence is divided into four sections (a, b, c). There is some error in one of these sections. Read the sentence carefully and mark the incorrect section. However, if you feel the sentence contains no error, mark part 'd'.

- Q.1** Although he was late (A)/ but he stopped on the way (B)/ to have coffee with his friends. (C)/ No error (D)
- Q.2** She was taking care of her baby for two hours (A)/ before she (B)/ was called by

- signed is known as \_\_\_\_\_.  
 (A) Corrigendum (B) Postdiction  
 (C) Postscript (D) Plutocracy
- Q.6** Endurance of pain without display of feelings or complaint  
 (A) Stoicism (B) Perseverance  
 (C) Reticence (D) Tolerance
- Q.7** In a state of anxiety -  
 (A) Bellicose (B) Frightened

- her mother. (C)/ No error (D)
- Q.3** No sooner did he see his teacher (A)/ when he (B)/ stopped copying. (C)/ No error (D)
- Q.4** Had you been to Mumbai, (A)/ I would also go (B)/ with you (C)/ No error (D).
- Q.5** She ran so fastly (A)/ that she was able to catch (B)/ the running bus (C)/ No error (D)

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- Q.6** He met me two days ago (A)/ but he never told me (B)/ about his grandmother's death. (C)/ No error (D).
- Q.7** I would request to you (A)/ to consider my application (B)/ for the role of junior engineer. (C)/ No error (D)
- Q.8** We are (A)/ looking forward (B)/ to see you personally. (C)/ No error (D)
- Q.9** Companies who are (A)/ into manufacturing, particularly in the (B)/ gems and stones business, would benefit the most from the new scheme. (C)/ No error (D)
- Q.10** The bill that I have (A)/ says the payment can be made (B)/ until April 30, 2018. (C)/ No error (D)
- Q.11** A student is required to demonstrate a high level of **comprehension** of the subject, especially in the social sciences. The word closest in meaning to **comprehension** is  
 (A) Understanding (B) Meaning  
 (C) Concentration (D) Stability

**[GATE 2014 : IIT Kharagpur (CE Set - 1)]**

- Q.12** Choose the statement where underlined word is used correctly.  
 (A) When the teacher eludes to different authors, he is being elusive  
 (B) When the thief keeps eluding the police, he is being elusive  
 (C) Matters that are difficult to understand, identify or remember are allusive  
 (D) Mirages can be allusive, but a better way to express them is illusory

**[GATE 2015 : IIT Kanpur (ME Set - 3, IN)]**

- Q.13** Choose the statement where underlined word is used correctly
- (A) The minister insured the victims that everything would be all right.  
 (B) He ensured that the company will not have to bear any loss.  
 (C) The actor got himself ensured against any accident.  
 (D) The teacher insured students of good results

**[GATE 2015 : IIT Kanpur (CE Set - 2)]**

- Q.14** Choose the statement where underlined word is used correctly.
- (A) The industrialist load a personnel jet.  
 (B) I write my experience in my personnel diary.  
 (C) All personnel are being given the day off.  
 (D) Being religious is a personnel aspect.

**[GATE 2015 : IIT Kanpur (CSE Set - 1, EE Set - 1)]**

- Q.15** Choose the statement(s) where the underlined word is used correctly :  
 (i) A prone is a dried plum.  
 (ii) He was lying prone on the floor.  
 (iii) People who eat a lot of fat are prone to heart disease.  
 (A) (i) and (ii) only  
 (B) (iii) only  
 (C) (i) and (ii) only  
 (D) (ii) and (iii) only

**[GATE 2016 : IISc Bangalore (ME Set - 2)]**

**13.1 Sentence Completion**

1.	C	2.	A	3.	B	4.	A	5.	A
6.	D	7.	B	8.	C	9.	C	10.	D
11.	C	12.	A	13.	C	14.	C	15.	C
16.	D	17.	C	18.	B	19.	A	20.	A
21.	C	22.	C	23.	D	24.	C	25.	B
26.	A	27.	A	28.	B	29.	A	30.	D
31.	C	32.	A	33.	C	34.	A	35.	B

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**13.2 Sentence Improvement**

1.	A	2.	A	3.	C	4.	A	5.	A
6.	A	7.	B	8.	A	9.	A	10.	C
11.	D	12.	C	13.	A				

**13.3 Sentence Correction**

1.	B	2.	D	3.	C	4.	D	5.	C
6.	B	7.	C	8.	D	9.	D	10.	B
11.	C	12.	A	13.	D	14.	C	15.	C
16.	A								

**13.4 Idioms & Phrases**

1.	D	2.	C	3.	C	4.	D	5.	C
6.	B	7.	D	8.	B	9.	C	10.	B
11.	A	12.	D	13.	D	14.	D	15.	B
16.	D	17.	D	18.	C	19.	A	20.	D
21.	C	22.	C	23.	A	24.	C		

**13.5 Synonyms & Antonyms**

1.	C	2.	A	3.	D	4.	B	5.	C
6.	B	7.	C	8.	B	9.	C	10.	C
11.	C	12.	D	13.	C	14.	C	15.	D
16.	D	17.	C	18.	D	19.	A	20.	D
21.	B	22.	B	23.	A	24.	B	25.	A
26.	D	27.	B	28.	C	29.	B	30.	B
31.	C	32.	C	33.	C	34.	D	35.	A
36.	A	37.	C						

**13.6 Spellings**

1.	D	2.	D	3.	A	4.	B	5.	A
6.	B	7.	C	8.	A	9.	A	10.	C
11.	C	12.	D	13.	A	14.	B		

**13.7 One Word Substitution**

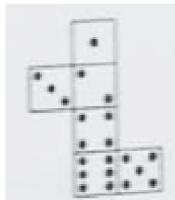
1.	B	2.	C	3.	C	4.	A	5.	C
6.	A	7.	D	8.	B	9.	C	10.	B
11.	A	12.	D						

**13.8 Error Finding**

1.	B	2.	A	3.	B	4.	B	5.	A
6.	B	7.	A	8.	C	9.	A	10.	C
11.	A	12.	B	13.	B	14.	C	15.	D

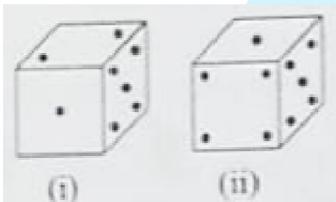
# 14) Cube & Dice

**Q.1** When the following figure is folded to form a cube, how many dots lie opposite the face bearing five dots?



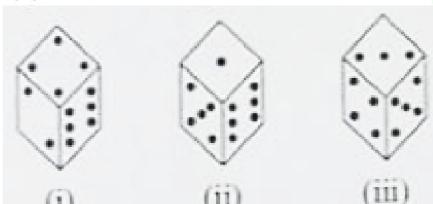



**Q.2** Observe the dots on a dice (one to six dots) in the following figures. How many dots are contained on the face opposite to that containing four dots?






**Q.3** Three different positions of a dice are shown below. How many dots lie opposite 2 dots?



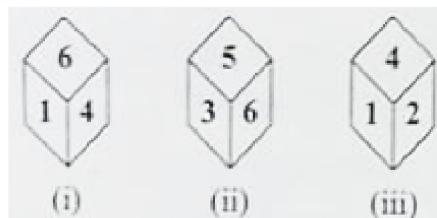



**Q.4** The six faces of a dice have been marked with alphabets A, B, C, D, E and F respectively. This dice is rolled down three times. The three positions are shown as:

Find the alphabet opposite A.

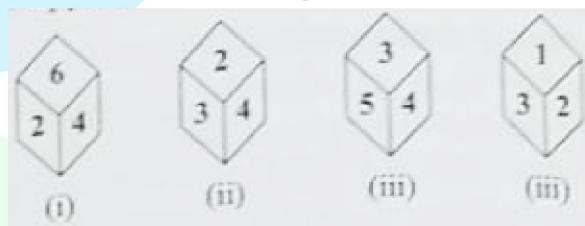


**Q.5** Three positions of a dice are given. Based on them find out which number is found opposite the number 2 in the given cube.



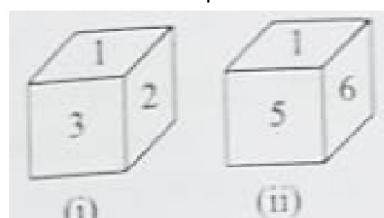


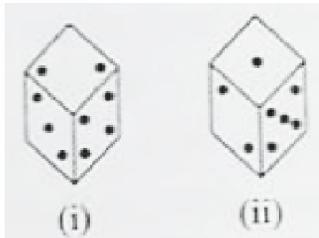
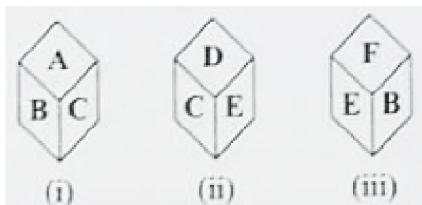

**Q.6** A dice is thrown four times and its four different positions are shown below. Find the number on the face opposite the face showing 2.






**Q.7** Two positions of a dice are shown. When 4 is at the bottom, what number will be on the top?





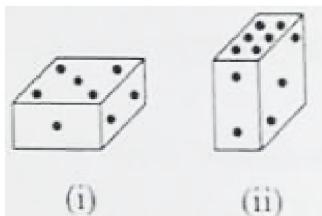



**Q.9** Below are depicted the three different positions of a dice. Find the number of dots on the face opposite to the face with one dot.



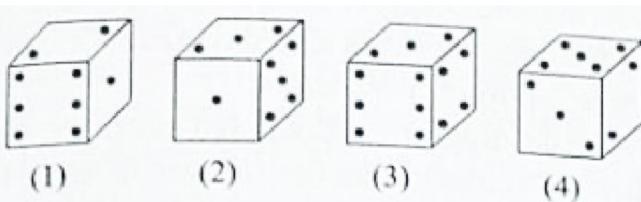



**Q.10** Two positions of a parallelepiped are shown below. When the number 3 will be on the top side, then which number will be at the bottom?





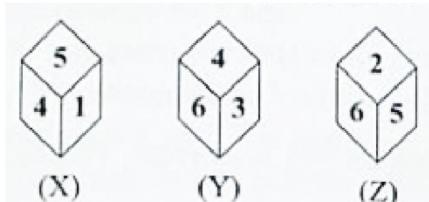

**Q.11** If the total number of dots on opposite faces of a cubical block is always 7, find the figure which is correct.



- (a) Figure 1                  (b) Figure 2  
(c) Figure 3                  (d) Figure 4

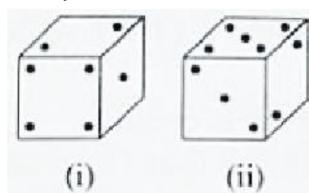
**Q.12** Three different positions  $X, Y$  and  $Z$  of a

**Q.8** A dice is rolled twice and the two positions are shown in the figure below. What is the number of dots at the bottom face when the dice is in position (i)?






**Q.13** Two positions of a cube are shown below. When the number 4 will be at the bottom, then which number will be at the top?






**Q.14** What is the least possible number of cuts required to cut a cube into 150 identical pieces?



**Directions for Questions 15 & 16 :** The questions are based on the following information.

A cube is painted in such a way that a pair of adjacent faces is painted in black; a pair of opposite faces is painted in blue and another pair of adjacent faces is painted in green. This cube is now cut into 125 small but identical cubes.

**Q.15** How many small cubes have at least two different colors on their faces?



**Q.16** How many of the small cubes have exactly one color on them?



**Directions for Questions 17 & 18 :** These

dice are shown in the figures given below. Which number lies at the bottom face in position X?

questions are based on the following information.

Two faces of a cube are painted pink, other two faces are painted black and the remaining



faces are painted brown. Now the cube is cut into 64 smaller but identical pieces with minimum possible number of cuts.

**Q.17** What is the minimum possible number of smaller pieces with exactly two different colors on them?



**Q.18** What is the maximum possible number of smaller pieces, which have at most one color on them?



**Q.19** A solid cube is painted red on all its faces. The cube is then cut into 120 smaller but equal pieces by making the minimum number of cuts. How many of the pieces are not painted at all?



Answer Key

1.	C	2.	A	3.	C	4.	C	5.	A
6.	C	7.	A	8.	C	9.	D	10.	C
11.	B	12.	B	13.	A	14.	B	15.	C
16.	C	17.	D	18.	D	19.	B		

