# **TCS Previous Placement Question Paper**

#### Verbal ability

Phrasal verbs/idioms

1. In the following question, a sentence is given with a phrase or idiom in brackets. Select the option given below that can replace the bracketed phrase.

I do not think he will (show off) at the event tonight; it's late already.

A show by B -

show down

C show up

D -No Improvement

Solution

We need a phrasal verb here that means to appear or arrive somewhere. SHOW UP will convey the requisite meaning. Thus, (c) is the right answer.

SHOW BY and SHOW DOWN are grammatically wrong. SHOW OFF means to boast of one's possessions or achievements.

Para-jumbled sentences

2. In the question given below, rearrange the sentences in the correct order, and choose the correct option.

P. Even research has linked secrecy to increased anxiety, depression, symptoms of poor health, and even the more rapid progression of disease.

Q. There is a seemingly obvious explanation for these harms: Hiding secrets is hard work.

R. It hurts to keep secrets.

S. Secrecy is associated with lower well-being, worse health, and less satisfying relationships.

A -RPQS **B -RSPQ** C -QRSP D -QPRS Solution

RSPQ is the final order.

R begins the passage by establishing the subject - it is painful to keep secrets. S continues by telling us how it hurts. P follows by confirming this by citing research. Q follows by telling us the reason for the harms mentioned in P. Thus, (b) is the right answer.

**Error** location

3. In the following question, one part of the sentence may have an error. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error' as your answer.

Home to one of the most impressed collections of naturalist (1)/ books and scientific journals in Africa, it served nearly 100 (2)/ staff members working at the Amani Hill Research Station. (3)/ No error (4)

A -1 B -4 C -2 D -3

Solution

(a) is the right answer. Replace IMPRESSED with IMPRESSIVE.

We need an adjective here to modify the noun COLLECTIONS. While IMPRESSED can also serve as an adjective, it is used to describe one who is awed or inspired by something or someone rather than something or someone that causes someone to be impressed. Collections, being an inanimate noun, cannot themselves be impressed, but they can cause one to be impressed. So, IMPRESSIVE should be used.

#### Active voice/passive voice

4. In the following question, a sentence has been given in Active/ Passive Voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active Voice.

Working class women face a lot of challenges in the industry.

A -

A lot of challenges are being faced by working class women in the industry.

## В-

### A lot of challenges are faced by working class women in the industry.

C -

A lot of challenges face working class women in the industry.

D -

A lot of challenges were being faced by working class women in the industry.

### Solution

The sentence is in active voice and in simple present tense (face). Follow the rules below to convert a sentence in the indicative mood to passive voice:

1. The subject clause will become the object clause. Here, the subject (WORKING CLASS WOMEN) will change to the object of the verb, and the object (A LOT OF CHALLENGES) will change into the subject and begin the sentence.

2. Replace FACE with ARE FACED. The passive voice construction for simple present tense is "is/ are + past participle".

3. Add the conjunction BY before WORKING CLASS WOMEN to link the verb with its object.

Option (b) is the right answer.

One word substitution

5. In the following question, out of the four alternatives, choose the one which can be substituted for the given words/sentence.

One who is very frugal in spending money or resources

```
A - miser
B - morgue
C - monotheist
D - monopoly
Solution
(a) is the right answer.
```

Morgue – a place where dead bodies are kept for identification.

Monotheist – a person who believes in only one god.

Monopoly – the sole possession or control over supply of something.

**Error location** 

6. In the following question, one part of the sentence may have an error. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error' as your answer.

In return for so luxuries, residents were required to abide by (1)/a strict set of rules meant to impose an orderly, domestic life, (2)/including bans on gardening and trading on the side. (3)/No error (4)

```
A -
4
B -
3
C -
2
D -
```

1

### Solution

(d) is the right answer. Replace SO with SUCH.

SO is an adverb and can only modify verbs, adverbs or adjectives (e.g. so beautiful), while SUCH is an adjective and can only modify nouns (e.g. such beauty). We need an adjective to modify the noun LUXURIES. So, SUCH will be used here.

#### Single filler

7. In the given sentence, a blank is given indicating that something is missing. From the given four options, choose the one that provides the correct word to be filled in the blank, thereby making the sentence grammatically and contextually correct.

It was not as if he did not remember it, it's just that the memory was too painful and left him in \_\_\_\_\_ every time he recalled it.

A -Agonising B -Laughter C -Glad D -Tears Solution

The idiom 'in tears' means crying or sobbing. The statement means that the memory was so painful that he cried every time he recalled it.

Thus, (d) is the correct answer.

idioms

8. In the question below, an idiom is given, followed by four options. Select the option that gives the correct meaning of the idiom.

I tried to break the ice at the party with a joke, but it didn't help.

A -

To create a ruckus

B -To start a fight

C -

To introduce myself

D -

To say something to relieve tension or get a conversation going.

Solution

'Break the ice' means "to do something as a means of reducing or eliminating shyness, awkward tension, or unfamiliarity". Thus, (d) is the correct answer.

Para-jumbled sentences

9. In the question given below, rearrange the sentences in the correct order, and choose the correct option.

P. But there is also a second and equally important task: nurturing the next generation of scientists and engineers whose new discoveries and inventions will improve the lives of American citizens

Q. First, we must provide our nation's youth a comprehensive education, including science, to prepare them for the world in which they will live and work in the coming decades.

R. The challenge to our educational systems is twofold.

S. We live in a technology-driven world where accelerating innovation and change are dominant themes.

```
A -
PQRS
B -
PSQR
C -
SQRP
D -
SRQP
Solution
```

SRQP is the final order.

S begins the passage by telling us that we live in a tech-driven world where innovation and change are dominant themes. R follows by telling us that the challenge to our education systems is twofold. Q gives us the first of these challenges and P follows by giving us the second. Thus, (d) is the right answer.

**Error** location

10. In the following question, one part of the sentence may have an error. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error' as your answer.

Society, at large, may assume that science moves in a (1)/linear direction, one that constantly improves (2)/ upon itself, but those whom take the long view know better. (3)/ No error (4)

A -2 B -4 C -3 D -1

Solution

(c) is the right answer. Replace WHOM with WHO.

We need to use the subjective pronoun WHO instead of the objective WHOM here, as it is being used to form the subject of the verb TAKE.

Active voice/passive voice

11. In the following question, a sentence has been given in Active/ Passive Voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active Voice.

The government had procured the food grains from the farmers after the monsoon.

A -

The food grains had been procured by the government before the monsoon.

В-

The food grains was procured by the government before the monsoon.

C -

The food grains is procured by the government before the monsoon.

D -

The food grains has been procured by the government before the monsoon.

Solution

The sentence is in active voice and in past perfect tense (HAD PROCURED). Follow the rules below to convert a sentence in the indicative mood to passive voice:

1. The subject clause will become the object clause. Here, the subject THE GOVERNMENT will change to the object of the verb, and the object THE FOOD GRAINS will change into the subject and begin the sentence.

2. Replace HAD PROCURED with HAD BEEN PROCURED. The passive voice construction for past perfect tense is "HAD + BEEN + past participle".

3. Add the conjunction BY before THE GOVERNMENT to link the verb with its object.

Option (a) is the right answer.

Spelling test

12. In the following question, four different words are given, out of which only one is correct. Find the word that is correctly spelt.

A -Semetry B -Sensure C -Compatibility D -Conscionce

Solution

The correctly spelled word is 'compatibility'. The correct spellings of other words are: 'cemetery', 'censure' and 'conscience'.

Thus, (c) is the correct answer.

Single filler

13. In the given sentence, a blank is given indicating that something is missing. From the given four options, choose the one that provides the correct word to be filled in the blank, thereby making the sentence grammatically and contextually correct.

Hong Kong is set to introduce a controversial bill that would make disrespecting the Chinese national anthem a crime \_\_\_\_\_ by up to three years in prison.

A -Criticised B -Punishable C -Condemnable

D -Trustworthy

Solution

The missing word is an adjective that describes the crime (disrespecting the Chinese national anthem). Only 'punishable' is the appropriate choice.

'Criticised' is a verb. 'Condemnable' means to indicate strong disapproval of something.

Thus, (b) is the correct answer.

Error location

14. In the following question, one part of the sentence may have an error. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error' as your answer.

Besides from funding, political stability is (1)/ another requisite for sustained (2)/ development of science and technology. (3)/ No error (4)

A -

3

B -2 C -4 D -1

Solution

(d) is the right answer. Replace BESIDES with ASIDE, or remove FROM.

The preposition FROM after BESIDES is incorrect. It will either be 'Aside from funding...' or 'Besides funding...'

Phrasal verbs/idioms

15. In the following question, a sentence is given with a phrase or idiom in brackets. Select the option given below that can replace the bracketed phrase.

You can (join up) the conversation too.

```
A -
join in
B -
join off
C -
join about
D -
No Improvement
```

Solution

We need a phrasal verb that means to participate in something. JOIN IN will fit here. Thus, (a) is the right answer.

JOIN UP means to link two things. JOIN OFF and JOIN ABOUT are grammatically incorrect.

Reading comprehension

(16-20) Directions: Read the following passage carefully and answer the questions.

America has been baking this weekend. An estimated 128 million people along the East Coast and in the Midwest were affected by excessive-heat warnings. This particular heatwave is likely to fade quickly, but such events are becoming more common. The US Global Change Research programme has projected that by mid-century, there may be 20-30 more days each year in most parts of America when maximum temperatures exceed 32°C. It is a similar story elsewhere. Researchers think that a record-breaking heatwave in France earlier this summer was five times more likely than it would have been without global warming. Europe is set to experience another bout of very hot weather this week.

The prospect of more frequent and intense heat waves raises especially pointed questions for city officials, because surface air temperatures are higher in urban environments. This "urban heat-island effect" has several causes including traffic and city layout. But its principal cause is simply that paved environments absorb more heat, whose release then warms the surrounding air. Daytime temperatures are 1-3°C higher in American cities than in surrounding rural areas; the differences are even starker at night. This phenomenon was first documented in the early 19th century by a meteorological pioneer called Luke Howard. In his three-volume The Climate of London, Howard concluded that "the temperature of the city is not to be considered as that of the climate; it partakes too much of an artificial warmth, induced by its structure, by a crowded population, and the consumption of great quantities of fuel in fires."

The stakes are far higher today. More people are living in cities and temperatures are rising. This increases the risks to human health: one study into a heatwave in 2003 in the Midlands in Britain suggested that the heat-island effect was responsible for about half of the total heat-related mortality then experienced. Heat also worsens urban air quality by producing higher concentrations of ozone. Heat islands also have profound effects on emissions, as higher temperatures outside increase demand for energy inside. Higher urban air temperatures are responsible for 5–10% of peak electricity demand for air conditioning in America.

The structure of cities matters. Street canyons, roads flanked on both sides by high buildings, create shade but also have less exposure to the sky and less chance for heat to be transferred away into the surrounding air. A study in 2018 from the Massachusetts Institute of Technology found that grid layouts, like those in New York and Chicago, are considerably hotter than those that are more chaotic, such as Boston or London. Researchers surmised that heat coming off one building is more likely to be absorbed by another one opposite in grid layouts. Such lessons are more useful in places where cities are still being built out. Elsewhere, the emphasis is on changing the surfaces of cities. More vegetation is one obvious answer. Trees in particular offer lots of shade and, through a process called evapotranspiration, use energy from the sun to evaporate water within their leaves. That has a cooling effect; a study of street trees in California calculated that they were responsible for lower demand for air conditioning and net annual energy savings worth just over \$100m. But trees take time to grow, and research is still needed on which varieties have the greatest cooling impact and grow best in cities.

16.As per the passage, what is the chief cause of the urban heat-island effect?

1. Traffic

2. City layout

3. Paved environments

A -Only 3 B -

Only 1 and 2

C -Only 1 and 3

D -Only 2 and 3

Solution

(a) is the right answer. Refer to the lines: *This "urban heat-island effect" has several causes—including traffic and city layout. But its principal cause is simply that paved environments absorb more heat, whose release then warms the surrounding air.* The passage explicitly states that the main reason behind the urban heat-island effect are paved environments as they absorb more heat and they warm up the surrounding air. Neither (1) nor (2) has been listed as the major cause of the urban heat-island effect.

17. As per the passage, which of the following statements is true?

A -

Luke Howard criticised the industrialists in his book.

#### В-

Luke Howard was the first to establish a link between global warming and climate change.

C -

In his book, Luke Howard talked about the ill-effects of industrialisation.

D -

Luke Howard first documented the urban heat-island effect.

#### Solution

(D) is the right answer. Refer to the lines: *This phenomenon was first documented in the early 19th century by a meteorological pioneer called Luke Howard.* The phenomenon that is being referred to here is the urban heat-island effect. The other options are incorrect as they are neither mentioned nor can they be deduced from the passage.

18. Which of the following is an implication of the urban heat-island effect?

1. Increase in expenditure for the maintenance of infrastructure

2. Rise in energy demand

3. Adverse effect on emissions

```
A -
Only 3
B -
Only 1 and 2
C -
Only 1 and 3
D -
Only 2 and 3
Solution
```

(d) is the right answer. Refer to the lines: *Heat islands also have profound effects on emissions, as higher temperatures outside increase demand for energy inside. Higher urban air temperatures are responsible for 5–10% of peak electricity demand for air conditioning in America.* Thus, both (2) and (3) can be

caused by urban heat-island effect. (1) is incorrect as it has not been mentioned in the passage.

19. What course of action/(s) does the passage suggest in order to bring the urban temperatures down?

A -

deploying shades to decrease exposure to sky

B - increasing vegetation cover in cities

C -

flanking of roads on both sides

D-All of the above

Solution

(d) is the right answer. All the options have been mentioned in the passage.

(a) and (c) are correct. Refer to the lines: Street canyons, roads flanked on both sides by high buildings, create shade but also have less exposure to the sky and less chance for heat to be transferred away into the surrounding air.

(b) is correct. Refer to the lines: More vegetation is one obvious answer.

(d) is correct. Refer to the lines: *Researchers surmised that heat coming off one building is more likely to be absorbed by another one opposite in grid layouts.* 

20. What is the central idea of the passage?

A -

It aims to discuss the adverse effects of global warming on urban areas.

В -

It aims to compare the effects of climate change on urban and rural areas.

C -

It aims to discuss the phenomenon of urban heat-island effect and possible ways to counter it.

D -

It aims to give a brief introduction of the urban heat-island effect.

#### Solution

(c) is the right answer. The second paragraph of the passage discusses the urban heat-island effect and the last paragraph discusses the various ways through which it can be countered. Thus, (b) aptly summarises the central idea of the passage. (d) is incorrect as the passage does more than just giving a brief introduction of the urban heat-island effect.

(a), (b) and (e) talk about global warming and climate change, which is not the central idea of the passage.

Phrasal verbs/idioms

21. In the following question, a sentence is given with the phrase or idiom highlighted in bold. Identify the option that contains a word similar to the phrase contextually and can replace it. If all the options fit in the sentence grammatically and contextually, mark 'All' as the right answer.

The appraisal meeting was put off until next month because the company was being restructured.

A surrendered B postponed C cancelled D called Solution

(b) is the right answer. The sentence seeks to convey that the meeting was rescheduled because the company was undergoing restructuring. TO PUT OFF means to postpone.

SURRENDERED- stop resisting to an enemy or opponent and submit to their authority

CANCELLED- decide or announce that (a planned event) will not take place

CALLED- cry out to (someone) in order to summon them or attract their attention

Phrasal verbs/idioms

22. In the following question, a sentence is given with the phrase or idiom highlighted in bold. Identify the option that contains a word similar to the phrase contextually and can replace it. If all the options fit in the sentence grammatically and contextually, mark 'All' as the right answer.

The company ran into a lot of financial problems but it decided to push on regardless.

A initiate B participate C request D continue

Solution

(d) is the right answer. The sentence seeks to convey that the company faced a lot of financial hurdles but they decided to remain in business regardless. CONTINUE(to persist in an activity or process) can replace the highlighted phrase.

INITIATE- to cause (a process or action) to begin.

PARTICIPATE- to take part in something

REQUEST- to politely or formally ask for something

Single filler

23. In the given sentence, a blank is given indicating that something is missing. From the given four options a combination of words would fit the blank thereby making it grammatically and contextually correct.

One important way that digital technologies \_\_\_\_\_\_ firm performance is by improving managers' ability to build an appropriate workforce.

```
    attribute
    distinguish
    affect
    influence
    influence
    and 2
    and 3
    -

            and 3
            -
                 and 4
```

(d) is the right answer. We need a verb to link the subject (TECHNOLOGIES) with the object (FIRM PERFORMANCE). The sentence seeks to convey that digital technologies have enhanced the ability of a manager to build an appropriate workforce. AFFECT(to have an effect on something) and INFLUENCE are synonyms. They both fit contextually.

ATTRIBUTE- to regard something as being caused by an agent

DISTINGUISH- recognize or treat (someone or something) as different

Single filler

24. In the given sentence, a blank is given indicating that something is missing. From the given four options a combination of words would fit the blank thereby making it grammatically and contextually correct.

To protect public sector jobs from becoming instruments of political patronage, employment decisions must be governed by \_\_\_\_\_\_ hiring practices.

- 1. fickle
- 2. skewed
- 3. impartial
- 4. unbiased

```
A -
1 and 2
B -
2 and 3
C -
1 and 3
D -
3 and 4
```

Solution

(d) is the right answer. We need an adjective to modify the noun phrase HIRING PRACTICES. The sentence seeks to convey that in order to protect public sector jobs from becoming a tool of political parties, the decisions related to their recruitment process must be driven by fair hiring practices. IMPARTIAL(treating all rivals or disputants equally) and UNBIASED(showing no prejudice for or against something) fit contextually.

FICKLE- changing frequently, especially as regards one's loyalties or affections

SKEWED- suddenly change direction or position.

Stack based puzzle

### **Reasoning ability**

(25-29) Directions: Answer the questions based on the information given below:

There are 11 boxes A, B, C, D, E, F, G, H, I, J and K which are kept one above the other. The bottommost box is numbered 1 and the topmost box is numbered 11.

F is three boxes above E and neither of them is a prime numbered box. K is two boxes above D.

Number of boxes above F is equal to the number of boxes below D. There are at least three boxes between K and B. C is immediately below B but is not box 2. J is two boxes above G but not the topmost box. H is below box 6. I is at most three boxes above A.

25.Which box is the bottommost box?

H B -D C -F D -

С

Solution

As F is three boxes above E and neither of them is a prime numbered box.

K is two boxes above D.

No. of boxes above F is equal to the no. of boxes below D, so

	Case I	Case II
11		
10	К	
9		F
8	D	
7		
6		E
5		К
4	F	
3		D
2		
1	E	

There are at least three boxes between K and B.

C is immediately below B but is not box 2.

	Case I	Case II
11		В
10	К	С
9		F
8	D	
7		
6	В	E
5	С	К
4	F	
3		D
2		
1	E	

J is two boxes above G but not the topmost box, so J is either box 9 or box 4 and G either box 7 or box 2.

H is below box 6.

I is at most three boxes above A, this is not possible in case I, so case I is rejected. And thus, H is the bottommost box, I is box 8 and A is box 7.

The final table is given below:

	Case II
11	В

10	С
9	F
8	I
7	А
6	E
5	К
4	J
3	D
2	G
1	Н

H is the bottommost box.

Hence, option a.

26. How many boxes are above A?

A -

Three

В -

Five

#### C -

Two

## D -

Four

Solution

As F is three boxes above E and neither of them is a prime numbered box.

K is two boxes above D.

No. of boxes above F is equal to the no. of boxes below D, so

	Case I	Case II
11		
10	К	
9		F
8	D	
7		
6		E
5		К
4	F	
3		D
2		
1	E	

There are at least three boxes between K and B.

C is immediately below B but is not box 2.

	Case I	Case II
11		В
10	К	С

9		F
8	D	
7		
6	В	E
5	С	К
4	F	
3		D
2		
1	E	

J is two boxes above G but not the topmost box, so J is either box 9 or box 4 and G either box 7 or box 2.

H is below box 6.

I is at most three boxes above A, this is not possible in case I, so case I is rejected. And thus, H is the bottommost box, I is box 8 and A is box 7.

The final table is given below:

	Case II
11	В
10	С
9	F
8	I
7	A

6	E
5	К
4	J
3	D
2	G
1	Н

There are four boxes above A.

Hence, option d.

27. Which among the following boxes is between J and E?

I. I

II. K

III. C

#### A -

Both I and II

В-

Only II

C -

Both II and III

#### D -

Only I

#### Solution

As F is three boxes above E and neither of them is a prime numbered box.

K is two boxes above D.

No. of boxes above F is equal to the no. of boxes below D, so

	Case I	Case II
11		
10	К	
9		F
8	D	
7		
6		E
5		К
4	F	
3		D
2		
1	E	

There are at least three boxes between K and B.

C is immediately below B but is not box 2.

	Case I	Case II
11		В
10	К	С
9		F
8	D	

7		
6	В	E
5	С	К
4	F	
3		D
2		
1	E	

J is two boxes above G but not the topmost box, so J is either box 9 or box 4 and G either box 7 or box 2.

H is below box 6.

I is at most three boxes above A, this is not possible in case I, so case I is rejected. And thus, H is the bottommost box, I is box 8 and A is box 7.

The final table is given below:

	Case II
11	В
10	С
9	F
8	I
7	А
6	E
5	К

4	J
3	D
2	G
1	Н

Among the given options, K is between J and E.

Hence, option b.

28. What is the position of J with respect to F?

A -4 boxes below

B -6 boxes below

C -2 boxes above

D -5 boxes below

Solution

As F is three boxes above E and neither of them is a prime numbered box.

K is two boxes above D.

No. of boxes above F is equal to the no. of boxes below D, so

	Case I	Case II
11		
10	К	
9		F

8	D	
7		
6		E
5		К
4	F	
3		D
2		
1	E	

There are at least three boxes between K and B.

C is immediately below B but is not box 2.

	Case I	Case II
11		В
10	К	С
9		F
8	D	
7		
6	В	E
5	С	К
4	F	

3		D
2		
1	E	

J is two boxes above G but not the topmost box, so J is either box 9 or box 4 and G either box 7 or box 2.

H is below box 6.

I is at most three boxes above A, this is not possible in case I, so case I is rejected. And thus, H is the bottommost box, I is box 8 and A is box 7.

The final table is given below:

	Case II
11	В
10	С
9	F
8	I
7	A
6	E
5	К
4	J
3	D
2	G
1	Н

J is 5 boxes below F.

Hence, option d.

29. Which among the following statement(s) is/are true?

A -C is below K.

B -K is 2 boxes below C.

C -A is 3 boxes above D.

D -

None is true.

Solution

As F is three boxes above E and neither of them is a prime numbered box.

K is two boxes above D.

No. of boxes above F is equal to the no. of boxes below D, so

	Case I	Case II
11		
10	К	
9		F
8	D	
7		
6		E
5		К

4	F	
3		D
2		
1	E	

There are at least three boxes between K and B.

C is immediately below B but is not box 2.

	Case I	Case II
11		В
10	К	С
9		F
8	D	
7		
6	В	E
5	С	К
4	F	
3		D
2		
1	E	

J is two boxes above G but not the topmost box, so J is either box 9 or box 4 and G either box 7 or box 2.

H is below box 6.

I is at most three boxes above A, this is not possible in case I, so case I is rejected. And thus, H is the bottommost box, I is box 8 and A is box 7.

The final table is given below:

	Case II
11	В
10	С
9	F
8	I
7	А
6	E
5	К
4	J
3	D
2	G
1	Н

None is true.

Hence, option D.

Circular sitting arrangement

(30-33) Directions: Answer the questions based on the information given below:

Eight persons S1, S2, S3, S4, S5, S6, S7 and S8 sit around a circular table. Some of them face towards the centre while others face outside.

Person who sits 3<sup>rd</sup> to the left of S1 faces outside. S7 sits beside S1 and opposite to S4, who faces towards the centre. S5 sits 2<sup>nd</sup> to the left of S4. S3 sits to immediate right of S5. S8 sits beside S6, who sits 3<sup>rd</sup> to the left of S3. S3 faces towards the centre. S8 doesn't sit 2<sup>nd</sup> to the right of S2 but both face same direction. S8 doesn't sit to the immediate right of S6, who faces in opposite direction to that of S7.

30. Who sits 3<sup>rd</sup> to the right of S7?

A -S5 B -S2 C -S8 D -S6

Solution

As person who sits 3<sup>rd</sup> to the left of S1 faces outside.

S7 sits beside S1 and opposite to S4, who faces towards the centre.

S5 sits 2<sup>nd</sup> to the left of S4, so



S3 sits immediate right of S5.

S8 sits beside S6, who sits  $3^{rd}$  to the left of S3.



S3 faces towards the centre, so case II is rejected.

S8 doesn't sit 2<sup>nd</sup> to the right of S2 but both face same direction, so S2 and S8 face outside.

S8 doesn't sit immediate right of S6, who face opposite to S7, so S6 faces towards the centre and S7 faces outside.

The final seating arrangement is given below:



S8 sits 3<sup>rd</sup> to the right of S7.

Hence, option c.

31. What is the position of S4 with respect to the person, who sits to the immediate right of S1?

```
A -

3<sup>rd</sup> to the left

B -

2<sup>nd</sup> to the right

C -

3<sup>rd</sup> to the right

D -
```

 $2^{nd}$  to the left

Solution

As person who sits 3<sup>rd</sup> to the left of S1 faces outside.

S7 sits beside S1 and opposite to S4, who faces towards the centre.

S5 sits 2<sup>nd</sup> to the left of S4, so



S3 sits immediate right of S5.

S8 sits beside S6, who sits 3<sup>rd</sup> to the left of S3.



S3 faces towards the centre, so case II is rejected.

S8 doesn't sit 2<sup>nd</sup> to the right of S2 but both face same direction, so S2 and S8 face outside.

S8 doesn't sit immediate right of S6, who face opposite to S7, so S6 faces towards the centre and S7 faces outside.

The final seating arrangement is given below:



S6 sits immediate right of S1. S4 sit 2<sup>nd</sup> to the left of S6. Hence, option d.

32. If counted from the right of S8, how many persons sit between S8 and S1?

A -Five B -Two C -

Three

D -

Four

Solution

As person who sits 3<sup>rd</sup> to the left of S1 faces outside.

S7 sits beside S1 and opposite to S4, who faces towards the centre.

S5 sits 2<sup>nd</sup> to the left of S4, so


S3 sits immediate right of S5.

S8 sits beside S6, who sits 3<sup>rd</sup> to the left of S3.



S3 faces towards the centre, so case II is rejected.

S8 doesn't sit 2<sup>nd</sup> to the right of S2 but both face same direction, so S2 and S8 face outside.

S8 doesn't sit immediate right of S6, who face opposite to S7, so S6 faces towards the centre and S7 faces outside.

The final seating arrangement is given below:



If counted from the right of S8, five persons sit between S8 and S1.

Hence, option a.

33. Which among the following doesn't form a group?

A -S5, S3 B -S7, S1 C - S8, S4

D -

S5, S2

Solution

As person who sits 3<sup>rd</sup> to the left of S1 faces outside.

S7 sits beside S1 and opposite to S4, who faces towards the centre.

S5 sits 2<sup>nd</sup> to the left of S4, so



S3 sits immediate right of S5.

S8 sits beside S6, who sits  $3^{rd}$  to the left of S3.



S3 faces towards the centre, so case II is rejected.

S8 doesn't sit 2<sup>nd</sup> to the right of S2 but both face same direction, so S2 and S8 face outside.

S8 doesn't sit immediate right of S6, who face opposite to S7, so S6 faces towards the centre and S7 faces outside.

The final seating arrangement is given below:



In all the options except option (b), the first person sits immediate right of the second person.

Hence, option b.

(34-36) Directions: Answer the questions based on the information given below:

Six students P, Q, R, S, T and U appeared for a Maths test and obtained different marks (out of 10) among 3, 5, 6, 7, 8 and 9. Each of them belongs to different place.

U scored 3<sup>rd</sup> lowest marks. Student from Noida scored four marks more than the one from Bangalore.

Difference between marks of Q and R is 2<sup>nd</sup> highest. S scored neither 7 nor 9 marks. P scored less than T, who is not from Noida. Student from Patna scored one mark less than P. Student from Chennai scored less than the one from Pune. S is not from Indore. Q scored at most four marks less than the one from Indore.

34. Who is from Chennai?

A -S B -T C -Q D -P

As U scored 3<sup>rd</sup> lowest marks.

Student from Noida scored four marks more than the one from Bangalore.

Difference between marks of Q and R is 2<sup>nd</sup> highest, so

Case I		Case II			
U		6	U		6
	Noida	7		Noida	9
Q/R	Bangalore	3		Bangalore	5
R/Q		8	Q/R		3
			R/Q		8

S scored neither 7 nor 9 marks, so S must have scored 5 marks.

P scored less than T, who is not from Noida, this contradicts case II, so case II is rejected.

Case I				
U		6		
Р	Noida	7		
Q/R	Bangalore	3		
R/Q		8		
S		5		
Т		9		

Student from Patna scored one marks less than P, so U is from Patna.

Student from Chennai scored less than the one from Pune.

S is not from Indore.

Q scored at most four marks less than the one from Indore, so S is from Chennai and scored 5 marks, T is from Indore and scored 9 marks and Q is from Pune and scored 8 marks.

The final table is given below:

Case I				
U	Patna	6		
Ρ	Noida	7		
R	Bangalore	3		
Q	Pune	8		
S	Chennai	5		
Т	Indore	9		

S is from Chennai.

Hence, option a.

35. T is from which place?

A -

Noida

### В-

Pune

# C -

Chennai

D -

Indore

As U scored 3<sup>rd</sup> lowest marks.

Student from Noida scored four marks more than the one from Bangalore.

Difference between marks of Q and R is 2<sup>nd</sup> highest, so

Case I		Case II			
U		6	U		6
	Noida	7		Noida	9
Q/R	Bangalore	3		Bangalore	5
R/Q		8	Q/R		3
			R/Q		8

S scored neither 7 nor 9 marks, so S must have scored 5 marks.

P scored less than T, who is not from Noida, this contradicts case II, so case II is rejected.

Case I				
U		6		
Р	Noida	7		
Q/R	Bangalore	3		
R/Q		8		
S		5		
Т		9		

Student from Patna scored one marks less than P, so U is from Patna.

Student from Chennai scored less than the one from Pune.

S is not from Indore.

Q scored at most four marks less than the one from Indore, so S is from Chennai and scored 5 marks, T is from Indore and scored 9 marks and Q is from Pune and scored 8 marks.

The final table is given below:

Case I				
U	Patna	6		
Ρ	Noida	7		
R	Bangalore	3		
Q	Pune	8		
S	Chennai	5		
Т	Indore	9		

T is from Indore.

Hence, option d.

36. What is the sum of marks of S and R?

A -8 B -12 C -13 D -15

Solution

As U scored 3<sup>rd</sup> lowest marks.

Student from Noida scored four marks more than the one from Bangalore.

Difference between marks of Q and R is 2<sup>nd</sup> highest, so

Case I		Case II			
U		6	U		6
	Noida	7		Noida	9
Q/R	Bangalore	3		Bangalore	5
R/Q		8	Q/R		3
			R/Q		8

S scored neither 7 nor 9 marks, so S must have scored 5 marks.

P scored less than T, who is not from Noida, this contradicts case II, so case II is rejected.

Case I				
U		6		
Р	Noida	7		
Q/R	Bangalore	3		
R/Q		8		
S		5		
Т		9		

Student from Patna scored one marks less than P, so U is from Patna.

Student from Chennai scored less than the one from Pune.

S is not from Indore.

Q scored at most four marks less than the one from Indore, so S is from Chennai and scored 5 marks, T is from Indore and scored 9 marks and Q is from Pune and scored 8 marks.

The final table is given below:

Case I				
U	Patna	6		
Ρ	Noida	7		
R	Bangalore	3		
Q	Pune	8		
S	Chennai	5		
Т	Indore	9		

S scored 5 marks and R scored 3 marks.

Sum = (5 + 3) = 8.

Hence, option a.

**Blood** relations

37. Q is father-in-law of R, who is sister-in-law of S, who is an unmarried female. T is mother of S. P is the only brother of S. Q is married. Who is father of P?

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

Family Tree:



Q is the father of P.

Hence, option d.

Alphabet test(alphabetical order of words)

38. Arrange the following words in dictionary order:

- 1. Template
- 2. Telegram
- 3. Temporal
- 4. Textbook
- 5. Telecast
- 6. Teenager
- 7. Tent

A -6512374

В -

6523174

# C -

5621347

D -

6521374

Solution

In dictionary order:

6. Teenager, 5. Telecast 2. Telegram 1. Template 3. Temporal 7. Tent 4. Textbook

Hence, option d.

Paper folding

39. A square paper is folded and cut as shown below. How will it appear when unfolded?













Hence, option b.

syllogisms

40. Three statements are given followed by three conclusions numbered I, II, and III assuming the statements to be true, even if they seem to be at variance with commonly known facts. Decide which of conclusions logically follow(s) from the statements.

Statements:

Some blue are red.

All yellow are red.

No red is black.

Conclusions:

I. Some blue are not black.

II. No yellow is black.

III. Some blue are yellow.

A -Only conclusion II follows

B -Only conclusion I follows

# C -

Both conclusion I and conclusion II follow.

### D -

Both conclusion II and conclusion III follow

### Solution

Following figure can be formed from the statements.





Only conclusion I and II follow.

Hence, option c.

Missing number series

41. Complete the given series.

8, 9.5, 11.5, 14, ?, 20.5 A -18 B -17 C -19 D -17.5

Given series:

8 + 1.5 = 9.5

9.5 + 2 = 11.5

11.5 + 2.5 = 14

14 + 3 = 17

17 + 3.5 = 20.5

Hence, option b.

Missing pairs

42. Which of the following pairs replaces '?' in series given.

C2E, E3H, H4L, ? , Q6W A -N6T В-L7Q C -M4U D -L5Q Solution Given series C2E, E3H, H4L, ? , Q6W So, C + 2 = E E + 3 = H H + 4 = LL + 5 = QQ + 6 = W

Hence, option d.

Classification(choose the odd alphabetical pair)

43. Three of the following four letters clusters are alike in a certain way and one is different. Pick the odd one out.

A -OQRS B -BDEF C -GHIJ D -VXYZ Solution

In OQRS, there is gap of one letter between O and Q.

In BDEF, there is gap of one letter between B and D.

In GHIJ, there is no gap between any letter.

In VXYZ, there is gap of one letter between V and X.

Hence, option c.

Coding-decoding(direct number/symbol coding)

44. If FRIENDS is coded as 14 and SUNDAY is coded as 22, then how will LIGHTNING be coded as?

A - 20	
B - 15	
C - 13	
D - 18	
Solution	

The sum of number representing vowels in the given word.

In FRIENDS, the sum of alphabetical positions representing I and E is 14.

In SUNDAY, the sum of alphabetical positions representing U and A is 22.

In LIGHTNING, the sum of alphabetical positions representing two I's is 18.

Hence, option d.

Mirror image

45. Identify the mirror image of the following figure when the mirror is placed to the right of the figure.









If mirror is placed to the right of the figure.



Hence, option c.

Inserting the missing number

46.	Select the	digit which	can replace the	'?' from the	given four	alternatives
-----	------------	-------------	-----------------	--------------	------------	--------------

7	6	5				
16	44	23				
13	15	25				
62	63	?				
A - 48						
B - 81						
C - 62						
D - 50						
Solution						
Given						

7	6	5
---	---	---

16	44	23
13	15	25
62	63	50

The pattern is,

 $7 \times (1+6) + 13 = 62$ 

 $6 \times (4 + 4) + 15 = 63$ 

 $5 \times (2 + 3) + 25 = 50$ 

Hence, option d.

Coding-decoding(matrix coding)

47. A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as s0own in the given two matrices. The columns and rows of Matrix-I are numbered from 0 to 3 and that of Matrix-II are numbered from 4-7. A letter from these matrices can be represented first by its row and next by its column, for example, 'B' can be represented as '00' and 'S' can be represented by '46' or '11'. Similarly, you have to identify the set for the word 'FROSTED'.

Μ	at	rix	: - I	

	0	1	2	3
0	В	Ν	Q	V
1	D	S	V	А
2	Z	R	0	Y
3	E	Н	J	E

Matrix - II

	4	5	6	7
--	---	---	---	---

4	U	D	S	W
5	F	G	А	Q
6	С	Х	Z	К
7	L	Т	V	E
^				

A -

45, 22, 22, 11, 55, 31, 45

В-

54, 21, 22, 11, 75, 30, 45

C -

54, 21, 22, 11, 57, 30, 54

D -

45, 21, 21, 12, 75, 30, 45

Solution

Now, F is represented by '54'. R is represented by '21'. O is represented as '22', S is represented by '11', '46'. T is represented by '75'. E is represented by '77', '30' and '33'. D is represented by '10', '45'

Here, 'FROSTED' is represented by '54, 21, 22, 11, 75, 30, 45'.

Hence, option b.

Logical venn diagrams type-1

48. Identify the diagram that best represents the relationship among the given classes:

Year, Day, Month

A -















The best representation is:



Hence, option d.

Missing alphabet series

49. Which among the following set of letters can be placed in the gaps in the given alphabet series to follow a particular pattern?

```
ab_aa__c_a__bbb_cc
A -
bbbcccc
B -
aacccaa
C -
cbbcaac
D -
acacccb
Solution
abc / aabbcc / aaabbbccc
Hence, option c.
```

calenders

50. Ankur's birthday is on Saturday 29<sup>th</sup> July. On which day of the week will be Raj's birthday in the same year if Raj was born 12<sup>th</sup> September?

A -

Tuesday

В-

Wednesday

C -

Thursday

D -

Sunday

Solution

Number of days between two dates = 2 + 31 + 12 = 45.

Number of odd days = 45/7 so, the remainder is 3, which means Raj's birthday will be on Saturday + 3 = Tuesday.

Hence, option a.

Cubes&dices

51. Two positions of the same dice are given, which of the following number will be opposite to 6?

4



2 D -Cannot be determined

Solution

The number opposite to 6 is not determined.

Hence, option d.

Completion of incomplete pattern

52. Select the option in which will complete the following figure.















Hence, option c.

Distance&direction

53. Preeti runs 10km towards the east direction. She then turns left and starts walking for 6km. Again, she turns towards her left and starts walking for 6km. Finally, she turns her left and walks again for 6km. How far is she from her starting point?

A -2km B -4km C -6km D -1km Solution



So, Preeti is 4km away from the starting point.

Hence, option b.

Counting the no.of figures

54. How many triangles are there in the following figure?



There are total 7 triangles present in the figure.

Hence, option d.

Numerical ability

## HCF&LCM of numbers

55. How many numbers are there from 300 to 650 is completely divisible by both 5 and 7?

A - 10	
B - 12	
C - 8	
D - 15	

Solution

Since, the number has to be divisible by both 5 and 7 therefore all the multiples of 35 from 300 to 650 will be divisible by both 5 and 7.

Required numbers = 315, 350..... 630

Therefore,  $630 = 315 + (n - 1) \times 35$ 

Or, 630 – 315 + 35 = 35n

Or, n = 10

Hence, option a.

Time&work

56. Pawan, Sameer and Varun can complete a work in 12 days, 18 days and 15 days, respectively. If they do the same work together and the total wages paid to them is Rs. 4440, then find the share of Sameer.

A -Rs. 1620 B -Rs. 1800 C -Rs. 1200 D -Rs. 1560

Let the total work = 180 units

Efficiency of Pawan = 180/12 = 15 units/day

Efficiency of Sameer = 180/18 = 10 units/day

Efficiency of Varun = 180/15 = 12 units/day

Therefore, ratio of the efficiencies of Pawan, Sameer and Varun = 15:10:12

Therefore, share of Sameer =  $4440 \times (10/37)$  = Rs. 1200

Hence, option c.

Ratios&proportions

57. Rs. 2400 has to be divided among A, B and C in the ratio 5:3:8, respectively. Find the difference between the share of 'A' and 'C'.

A -Rs. 510 B -Rs. 360 C -Rs. 600 D -Rs. 450 Solution

Let the amount received by 'A', 'B' and 'C' be Rs. 5x, Rs. 3x and Rs. 8x, respectively

According to the question,

5x + 3x + 8x = 2400

Or, x = 2400/16 = Rs. 150

Required difference = 8x - 5x = 3x = Rs. 450

Hence, option d.

averages

58. The average age of a family of 5 members is 40 years. If the present age of youngest member is 4 years, then what was the average age of the family at the time of his birth.

A -45 years B -49 years C -42 years D -46 years

Solution

Sum of the present ages of all the five members =  $40 \times 5 = 200$  years

Required average =  $(200 - 4 \times 5)/4 = 45$  years

Hence, option a.

percentages

59. When the price of a cup is decreased by 20%, a person can buy 2 cups more for Rs. 120. Find the number of cups that can be bought with the original price.

B - 12 C - 6 D - 10 Solution	A - 8		
C - 6 D - 10 Solution	B - 12		
D - 10 Solution	C - 6		
Solution	D - 10		
	Solution		

Let the original price of each cup be Rs. 'x'

According to the question,

(120/0.8x) - (120/x) = 2

Or, 2x = 150 – 120

Or, x = 30/2 = Rs. 15

Required number of cups = 120/15 = 8

Hence, option a.

Time&distance

60. The speed of a car is 25% more than that of a bike. Both of them start of from point 'A' at the same time and reach point 'B' which is 240 km apart from 'A' together. In between the two points if the car stops for 60 minutes, then find the speed of the bike.

A - 48 km/hrB - 24 km/hrC - 36 km/hrD - 30 km/hrSolution Let the speed of the bike be 'x' km/hr Therefore, speed of the car = 1.25x km/hr According to the question, (240/x) - (240/1.25x) = 1Or, 1.25x = (300 - 240)Or, x = 60/1.25 = 48 km/hr

Hence, option a.

Data interpretation(pie chart on percentages)

(61-63)The given pie-chart shows the percentage distribution of number of cars sold of five different brands. The total number of cars of all the five brands sold is 24000.



61. Find the difference between the number of number Tesla's cars sold and Toyota's cars sold.

A -2460 B -1920 C -1580 D -1420 Solution Required difference = (21 – 13)% of 24000 = 1920 Hence, option b.

62. The difference between the number of Suzuki's car sold and Hyundai's cars sold is same as the difference of number of cars sold of

A -Tesla and Toyota

B -Suzuki and Nexa

C -Hyundai and Tesla

D -Nexa and Toyota

Solution

Difference between the number of Suzuki's cars sold and Hyundai's cars sold = (23 - 18)% of 24000 = 1200

Difference between the number of Hyundai's cars sold and Tesla's cars sold = (18 - 13)% of 24000 = 1200

Hence, option c.

63.. The number of Toyota's cars sold is how much percent more/less than that of Hyundai's cars?

A -16.66% B -8.33% C -14.24% D -12.33% Solution Required percentage = {(21 - 18)/18} × 100 = 16.66%

Hence, option a.

64. 64.. Vinay, Sarthak and Sunil invested some amount in the ratio 2:3:4, respectively at the rates of 15%, 20% and 25% per annum compound interest compounded annually. Find the ratio of the amounts received by them after one year.

A -14:17:40 B -23:36:50 C -21:42:20 D -None of these Solution

Let the amounts invested be Rs. 2x, Rs. 3x and Rs. 4x

2x(1 + 15/100):3x(1 + 20/100):4x(1 + 25/100) = 23:36:50

Hence, option b.

Quadratic equations

65. If (x - 3) and (x + 5) are the factors of the equation  $x^2 + k_1x + k_2 = 0$ , then find the value of  $k_1 + k_2$ .

A -15 B --13 C -18 D --10 Solution Putting x = 3 and x = -5 in the given equation, we get  $(3k_1 + k_2) = -9.....(1)$ 

 $(-5k_1 + k_2) = -25.....(2)$ 

On solving equations (1) and (2), we get

 $k_1 = 2$  and  $k_2 = -15$ 

Therefore,  $k_1 + k_2 = -13$ 

Hence, option b.

Trigonometry

66. What is the least value of  $sin^2x + tan^2x + cosec^2x + sec^2x + cot^2x + cos^2x$ ?

A --1 B -5 C -7 D -0

Solution

Putting the value of  $x = 45^{\circ}$ , we get the value of above expression

= (1/2) + 1 + 2 + 2 + 1 + (1/2) = 7.

Hence, option c.

Time&work

67. 'A' can complete a work in 10 days while 'B' can complete the same work in 15 days. If 'A' works with  $1/3^{rd}$  of his efficiency along with 'B', then find the number of days taken by them to complete the work.

A -12 days B -15 days C -10 days D -9 days
Solution

Let the total work = 30 units

Efficiency of 'A' = 30/10 = 3 units/day

Efficiency of 'B' = 30/15 = 2 units/day

Efficiency with which 'A' worked = 3/3 = 1 units/day

Required time taken = 30/(1 + 2) = 10 days

Hence, option c.

Problems on numbers

68. 85% of a number exceeds 40% of the same number by 90. Find the number.

A -250 B -150 C -120 D -200 Solution Let the number be 'x' According to the question,

(0.85 - 0.40)x = 90

Or, x = 90/0.45 = 200

Hence, option d.

Problems on ages

69. The average of present ages of Rajesh, Ravi and Amit is 44 years. The present age of Ravi is 40% more than that of Rajesh. If the present age of Amit is 72 years, then find the sum of the present ages of Rajesh and Amit.

A -

105 years B -97 years C -84 years D -90 years Solution Let the present age Rajesh be 'x' years Therefore, present age of Ravi = '1.4x' years According to the question,

 $1.4x + x = (3 \times 44) - 72$ 

Or, x = 60/2.4 = 25 years

Required sum = 25 + 72 = 97 years

Hence, option b.

Discounts

70. An article is marked up by 20% above its cost price. If after allowing a discount of Rs.100, the seller gains 12%, then find the selling price of the article.

A -Rs. 1280 B -Rs. 1450 C -Rs. 1320 D -Rs. 1400 Solution

Let the cost price of the article be Rs.  $\boldsymbol{x}$ 

According to the question,

1.2x - 1.12x = 100

Or, x = 100/0.08 = Rs. 1250

Required selling price = 1.12x = Rs. 1400

Hence, option d.

Mixtures&allegations

71. An alloy contains 40% Zinc and rest Iron. When 12 kg of Zinc and 28 kg of Iron is added to it, the new ratio of Zinc to Iron becomes 3:5. Find the initial quantity of the alloy.

A -180 kg B -150 kg C -120 kg D -80 kg

Solution

Let the initial quantity of Zinc and Iron in the alloy be 2x kg and 3x kg, respectively.

According to the question,

(2x + 12)/(3x + 28) = 3/5

Or, 10x + 60 = 9x + 84

Or, x = 24 kg

Therefore, initial quantity of alloy = 2x + 3x = 5x = 120 kg

Hence, option c.

Caselet on Ratios&proportions

(72-75) Directions: Answer the questions based on the information given below.

In an exhibition, there are three books stalls (I, II and III) and the total number of books of Hindi and English edition sold by three given stalls together is 2000. The number of books of Hindi edition sold by stall II is 35 more than the number of books of Hindi edition sold by stall III. The average of the number of books of Hindi edition sold by stall I and stall II are 355, and the number of books of Hindi edition sold by stall I is 320. The average of the number of books of Hindi and English edition sold by stall II is 375. The ratio of the number of books of English edition sold by stall I to stall III is 11:12.

72.What is the total number of books of Hindi and English edition together sold by stall II?

A -750 B -640 C -720 D -680

Solution

The number of books of Hindi edition sold by stall I = 320

The total number of books of Hindi edition sold by stall I and stall II together =  $355 \times 2 = 710$ 

The number of books of Hindi edition sold by stall II = 710 - 320 = 390

The total number of books of Hindi and English edition sold by stall II together =  $375 \times 2 = 750$ 

The number of books of English edition sold by stall II = 750 – 390 = 360

The number of books of Hindi edition sold by stall III = 390 - 35 = 355

Total number of books of English edition sold by stall I and stall III together = 2000 - 320 - 390 - 355 - 360 = 575

The number of books of English edition sold by stall I =  $575/23 \times 11 = 275$ 

The number of books of English edition sold by stall III = 575 – 275 = 300

Edition	Stall I	Stall II	Stall III	Total
Hindi	320	390	355	1065
English	275	360	300	935
Total	595	750	655	2000

Required number of books = 750

Hence, option a.

73. The number of books of Hindi edition sold by stall I is what percent of the total number of books of both editions sold by all three given stores?

A -20% B -12% C -16% D -18%

Solution

The number of books of Hindi edition sold by stall I = 320

The total number of books of Hindi edition sold by stall I and stall II together =  $355 \times 2 = 710$ 

The number of books of Hindi edition sold by stall II = 710 - 320 = 390

The total number of books of Hindi and English edition sold by stall II together =  $375 \times 2 = 750$ 

The number of books of English edition sold by stall II = 750 - 390 = 360

The number of books of Hindi edition sold by stall III = 390 - 35 = 355

Total number of books of English edition sold by stall I and stall III together = 2000 - 320 - 390 - 355 - 360 = 575

The number of books of English edition sold by stall I =  $575/23 \times 11 = 275$ 

The number of books of English edition sold by stall III = 575 - 275 = 300

Edition	Stall I	Stall II	Stall III	Total
Hindi	320	390	355	1065
English	275	360	300	935
Total	595	750	655	2000

Required percentage =  $320/2000 \times 100 = 16\%$ 

Hence, option c.

74. What is the difference between the number of books of English edition sold by stall II and stall III?

A -50 B -75 C -40 D -60

Solution

The number of books of Hindi edition sold by stall I = 320

The total number of books of Hindi edition sold by stall I and stall II together =  $355 \times 2 = 710$ 

The number of books of Hindi edition sold by stall II = 710 - 320 = 390

The total number of books of Hindi and English edition sold by stall II together  $= 375 \times 2 = 750$ 

The number of books of English edition sold by stall II = 750 – 390 = 360

The number of books of Hindi edition sold by stall III = 390 - 35 = 355

Total number of books of English edition sold by stall I and stall III together = 2000 - 320 - 390 - 355 - 360 = 575

The number of books of English edition sold by stall I =  $575/23 \times 11 = 275$ 

The number of books of English edition sold by stall III = 575 – 275 = 300

Edition	Stall I	Stall II	Stall III	Total
Hindi	320	390	355	1065
English	275	360	300	935
Total	595	750	655	2000

Required difference = 360 - 300 = 60

Hence, option d.

75. Find the ratio of the number of books of English edition sold by stall I to that by stall II.

A -72:59 B -70:53 C -65:61

D -55:72

Solution

The number of books of Hindi edition sold by stall I = 320

The total number of books of Hindi edition sold by stall I and stall II together =  $355 \times 2 = 710$ 

The number of books of Hindi edition sold by stall II = 710 - 320 = 390

The total number of books of Hindi and English edition sold by stall II together =  $375 \times 2 = 750$ 

The number of books of English edition sold by stall II = 750 - 390 = 360

The number of books of Hindi edition sold by stall III = 390 - 35 = 355

Total number of books of English edition sold by stall I and stall III together = 2000 - 320 - 390 - 355 - 360 = 575

The number of books of English edition sold by stall I =  $575/23 \times 11 = 275$ 

The number of books of English edition sold by stall III = 575 – 275 = 300

Edition	Stall I	Stall II	Stall III	Total
Hindi	320	390	355	1065
English	275	360	300	935
Total	595	750	655	2000

Required ratio = 275:360 = 55:72

Hence, option d.

Data interpretation(tabular form on percentages)

(76-78) Directions: Answer the questions based on the information given below.

The table given below shows the total number of people who purchased Amazon Prime Membership in five different cities, and the percentage distribution of the different age group (above 5 years to 60 years) of the people who purchased. Some of the data are given while some are missing.

		Age Group		
Cities	Total person	5 < Age ≤ 21	21 < Age ≤ 45	45 < Age ≤ 60
A	4800	30%	-	25%
В	-	40%	30%	-
С	-	25%	35%	40%

D	6000	-	40%	-
E	7200	-	-	40%

76.If the number of person who belongs to age group 5 < age  $\leq$  21 from city D purchases 600 more Amazon prime membership than the number of person who belongs to age group 45 < age  $\leq$  60 from city D, then find the number of person of age group 45 < age  $\leq$  60 who purchased the Amazon prime membership from city D.

A -2100 B -1600 C -1800 D -1500

Solution

City A:

Age group  $21 < Age \le 45 = 100 - 30 - 25 = 45\%$ 

Total		Age Group			
Cities	person	5 < Age ≤ 21	21 < Age ≤ 45	45 < Age ≤ 60	
А	4800	4800 × 30% = 1440	4800 × 45% = 2160	4800 × 25% = 1200	
В	-	40%	30%	-	
С	-	25%	35%	40%	
D	6000	-	6000 × 40% = 2400	-	

				7200 × 40% =
E	7200	-	-	2880

Number of persons who belongs to age group  $5 < age \le 21$  and  $45 < age \le 60$  together from city D who purchased Amazon Prime Membership = 6000 - 2400 = 3600

Let, number of persons who belongs to age group  $45 < age \le 60$  and who purchased Amazon Prime Membership be 'x'

So, x + x + 600 = 3600

2x = 3000

x = 1500

Hence, option d.

77. Find the number of the people who purchased Amazon Prime Membership and belong to age group  $21 < age \le 45$  from city D.

A -2250 B -2100 C -2400 D -2540 Solution

City A:

Age group  $21 < Age \le 45 = 100 - 30 - 25 = 45\%$ 

		Age Group		
	Total		1	1
Cities	person	5 < Age ≤ 21	21 < Age ≤ 45	45 < Age ≤ 60

А	4800	4800 × 30% = 1440	4800 × 45% = 2160	4800 × 25% = 1200
В	-	40%	30%	-
С	-	25%	35%	40%
D	6000	-	6000 × 40% = 2400	-
E	7200	-	-	7200 × 40% = 2880

Required number of people = 2400

Hence, option c.

78. The number of people who purchased Amazon Prime Membership from city A is what percent of the number of people who purchased Amazon Prime Membership from city D?

A -80% B -75% C -87.5% D -60% Solution

City A:

Age group  $21 < Age \le 45 = 100 - 30 - 25 = 45\%$ 

Cities		Age Group	
--------	--	-----------	--

	Total person	5 < Age ≤ 21	21 < Age ≤ 45	45 < Age ≤ 60
А	4800	4800 × 30% = 1440	4800 × 45% = 2160	4800 × 25% = 1200
В	-	40%	30%	-
С	-	25%	35%	40%
D	6000	-	6000 × 40% = 2400	-
E	7200	-	-	7200 × 40% = 2880

Required percent = 4800/6000 × 100 = 80%

Hence, option a.

Q1&Q2 comparison on mixtures&allegations

79. In the question, two quantities I and II are given. You have to solve both the quantities to establish the correct relation between Quantity-I and Quantity-II and choose the correct option.

Quantity-I: In the mixture of milk and water, the quantity of milk and water is 84 litres and 60 litres respectively. If x litre milk and 2x litre water are added in the mixture then the ratio of milk to water becomes 8:7, find the value of x.

Quantity-II: In a mixture, the quantity of the milk and water is 2x litres and 3x litres, respectively. If 30 litres of milk is added in the mixture then ratio of milk to water becomes 3:2, respectively, then find the value of x.

```
A -
Quantity-I > Quantity-II
B -
Quantity-I < Quantity-II
C -
Quantity-I ≤ Quantity-II
D -
```

Quantity-I = Quantity-II or No relation

Solution Quantity I: According to the question, (84 + x):(60 + 2x) = 8:7 588 + 7x = 480 + 16x 9x = 108 x = 12Quantity II: (2x + 30):3x = 3:2 4x + 60 = 9x 5x = 60 x = 12So, Quantity-I = Quantity-II.

Hence, option d.

Q1&Q2 comparison on probability

80. In the question, two quantities I and II are given. You have to solve both the quantities to establish the correct relation between Quantity-I and Quantity-II and choose the correct option.

Quantity-I: What is the probability of selecting a black and a red ball together from a basket containing 4 black and 6 red balls?

Quantity-II: What is the probability of selecting 2 black balls from a basket containing 4 black and 6 red balls?

```
A -
Quantity-I > Quantity-II
B -
Quantity-I < Quantity-II
```

C -

Quantity-I  $\leq$  Quantity-II

D -

Quantity-I = Quantity-II or No relation

Solution

Quantity I:

Required probability =  $({}^{4}C_{1} \times {}^{6}C_{1})/{}^{10}C_{2} = 8/15$ 

Quantity II:

Required probability =  ${}^{4}C_{2}/{}^{10}C_{2}$ = 2/15

So, Quantity-I > Quantity-II.

Hence, option a.