

STAFF SELECTION COMMISSION
Multi Tasking (Non-Technical) Staff

SOLVED PAPER

(13th June 2023: Shift-2)

Time Allotted- 90 Minutes

Max marks- 270

Important Instructions:-

- ⇒ This paper contains 90 questions which are divided into 4 sections and 2 sections each has 20 questions each and other 2 has 25 questions each.
 - ✓ General English
 - ✓ Numerical Aptitude
 - ✓ General Intelligence & Reasoning
 - ✓ General Awareness
- ⇒ There will be 3 marks for each correct answer and also there is no negative marking in General Intelligence & Reasoning and Numerical Aptitude sections. But in the General Awareness & General English sections, there is a negative marking of one mark for each wrong answer.
- ⇒ Each question is compulsory to attempt and there will be no negative marking for unattempted questions.

General English

1. Improve the underlined part of the sentence. Choose 'No improvement' as an answer if the sentence is grammatically correct.
You have exactly one hour to completes the exam.
 1. no improvement
 2. hour to completed
 3. hourly to complete
 4. hour to complete
2. Select the most appropriate meaning of the given idiom.
Ethnic Cleansing
 1. Worshipping of a certain ethnic or religious group on a massive scale
 2. Killing of a certain ethnic or religious group on a massive scale
 3. One who was previously unknown and is now prominent
 4. A large number of people either falling ill or dying
3. Select the word segment that substitutes (replaces) the bracketed word segment correctly and completes the sentence meaningfully. Select the option 'no correction required' if the sentence is correct as given.
They (are waiting) for the bus when the accident happened.
 1. no correction required
 2. have waited
 3. were waiting
 4. have been waiting
4. Select the most appropriate option to fill in the blank.
After the first defeats he had to _____ from France with the empress.
 1. Fleet
 2. Fling
 3. Flee
 4. Flea
5. In the following question, out of the given four alternatives, select the alternative which best expresses the meaning of the Idiom/Phrase.
Bite the bullet
 1. To bring harm to someone
 2. To ruin oneself
 3. Peace talking
 4. Decide to do something that is difficult
6. Select the word from the options which is exactly opposite in meaning to the bracketed word given in the sentence below.
Ruffin is seeking that (harmony) of humour in truth-telling amid despair.
 1. Conformity
 2. Discord
 3. Sectional
 4. Determination
7. Identify the segment that contains a grammatical error. If there is no error, select 'No error'.
I could not make out what/it is, for the wind was/rustling the corn-shocks.
 1. I could not make out what
 2. no error
 3. rustling the corn-shocks.
 4. it is, for the wind was
8. Select the most appropriate option to fill in the blank.
Inclusive of private packs it is difficult to _____ more than an overall total of 60 drag and/or bloodhound packs.
 1. haemorrhage
 2. package
 3. envisage
 4. discourage
9. Find the part of the given sentence that has an error in it. If there is no error, choose 'No error'.
Humans are drawn to foods that is fatty, sweet, rich and complex.
 1. no error
 2. sweet, rich and complex.
 3. humans are drawn to
 4. foods that is fatty,
10. Select the most appropriate option to fill in the blank.
Someone thinks Charles should _____ the British throne and come out here instead.
 1. reciprocate
 2. abdicate
 3. decorticate
 4. authenticate
11. Select the most appropriate option to fill in the blank.
_____ in biotechnology and medicine have resulted in higher expectancy rate and lower mortality rate.
 1. Arrogate
 2. Advancements
 3. Aversions
 4. Saturation
12. Identify the segment that contains a grammatical error. If there is no error, select 'No error'.
Far, far at the top of them,/a shower of bright red sparks/had flared among the stars.
 1. far, far at the top of them
 2. no error
 3. a shower of bright red sparks
 4. had flared among the stars.

36. Which two signs should be interchanged to make the given equation correct?

$$68 \div 2 - 42 + 108 \times 12 = 103$$

1. = and - 2. + and - 3. ÷ and × 4. ÷ and +

37. Two statements are given followed by two conclusions numbered I and II. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

All beds are pillows.

No pillow is a blanket.

Conclusions:

I. Some pillows are beds.

II. No bed is a blanket.

1. Neither conclusion I nor II follows
2. Only conclusion II follows
3. Both conclusions I and II follow
4. Only conclusion I follows

38. Select the option that is related to the third letter cluster in the same way as the second letter cluster is related to the first letter cluster.

AP : CN :: RT : ?

1. RT 2. TS 3. TR 4. SR

39. Select the set in which the numbers are related in the same way as are the numbers of the following sets. (NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g 13- Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed)

(27, 9, 3)

(125, 25, 5)

1. (512, 64, 8)

3. (739, 81, 9)

2. (243, 49, 7)

4. (206, 36, 6)

40. In a certain code language, 'MYNB' is coded as '2468', 'ZNBA' is coded as '5687', 'QRMA' is coded as '1253'. What is the code for 'Z' in that code language?

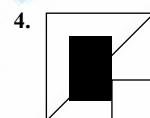
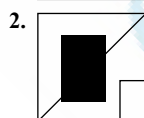
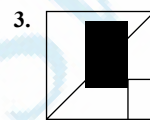
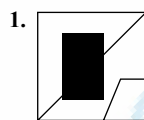
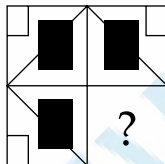
1. 7

2. 5

3. 6

4. 8

41. Which answer figure will complete the pattern in the question figure?



42. Which of the following letter cluster will replace the question mark (?) in the given series?

DH, EJ, FL, GN, ?

1. PH

2. HN

3. GM

4. HP

43. In the following question below are given some statements followed by some conclusions based on those statements.

Taking the given statements to be true even if they seem to be at variance from commonly known facts. Read all the

conclusions and then decide which of the given conclusion logically follows the given statements.

Statements:

I. Some pencil are paper.

II. No book is paper.

Conclusion:

I. Some pencil are not book.

II. All book are pencil.

III. Some paper are pencil.

1. Both conclusions I and III follows
2. Only conclusion II follows
3. All conclusion follows
4. Both conclusions II and III follows

44. Seven students of a school, E, F, G, H, I, J, and K have all obtained different scores. E's score was less than only one student. K scored more than only one person. H's score was more than I's but less than E's. Neither F nor G received the lowest score. I's score was more than K's. Who received the least score?

1. F

2. E

3. I

4. J

45. Words given on the left side of (::) are related with each other by some Logic/Rule/Relation. Select the missing word/word pair on the right side of (::) from the given alternatives based on the same Logic/Rule/Relation.

Clerk : Office :: ?

1. Warrior: Battle field

3. Shop: Grocer

2. Hospital: Farmer

4. Garage: Mechanic

Numerical Aptitude

46. In what ratio must tea worth of Rs.10 per kg be mixed with tea worth Rs.15 per kg. so that the resultant mixture costs Rs. 12 per kg?

1. 3 : 5

2. 2 : 3

3. 3 : 2

4. 2 : 5

47. The ratio of the volume of two cylinders is 13 : 1 and the ratio of their heights is 13 : 9. If the area of the base of the second cylinder is 154 cm², then what will be the radius of the first cylinder?

1. 42 cm

2. 21 cm

3. 28 cm

4. 14 cm

48. Mohit and Rohit undertook a work for Rs. 2200. Mohit alone can do that work in 10 days and Rohit alone can do the same work in 12 days. If they work together, then what will be the difference in the amount they receive?

1. Rs. 500

2. Rs. 200

3. Rs. 600

4. Rs. 400

49. A man multiplied a number by 8/5 instead of 5/8, what is the percentage error in the calculation?

1. 124%

2. 162%

3. 156%

4. 100%

50. 2 years ago, the ratio of X and Y's age was 7 : 5 and after 2 years their age will be in the ratio 9 : 7. What is the present age of Y?

1. 18 years

2. 12 years

3. 16 years

4. 14 years

51. The simple interest received on a sum at the rate of 8 percent per annum is 2/5 of the sum. What is the time period?

1. 6 years

2. 5 years

3. 4 years

4. 7.5 years

52. Vikas gave 3 examinations. The respective ratio of marks scored by him in the 3 examinations is 3 : 5 : 6. The respective ratio of maximum marks of the 3 examination is 7 : 11 : 10. If he scored 50 percent marks in total, then in how many examination has he scored marks more than 50 percent?

1. None

2. 1

3. 3

4. 2

53. Selling price of a glass is Rs. 1287 and loss percentage is 22 percent. If selling price is Rs. 1848. then what will be the profit percentage?

1. 12 percent

2. 15 percent

3. 10 percent

4. 8 percent

8. **Option (3) is correct.**
The correct sentence is: Inclusive of private packs, it is difficult to envisage more than an overall total of 60 drag and / or bloodhound packs. The verb 'envisage' means 'to imagine or expect something in the future, especially something good'.
9. **Option (4) is correct.**
The correct sentence is: Humans are drawn to foods that are fatty, sweet, rich and complex. Since there are a number of adjectives for foods, so the auxiliary will be in plural (are) and in simple present tense because it talks of a fact. The part 'foods that are fatty' is correct.
10. **Option (2) is correct.**
The correct sentence is: Someone thinks Charles should abdicate the British throne and come out here instead. Abdicate means 'to renounce a throne, high office, dignity, or function.' Reciprocate implies a mutual or equivalent exchange or a paying back of what one has received. Decorticate means to remove the bark, rind, or husk from.
11. **Option (2) is correct.**
The correct sentence is: Advancements in biotechnology and medicine have resulted in higher expectancy rate and lower mortality rate. Advancements refer to an improvement relating to a particular activity, (here, biotechnology and medicine) have shown great improvement in higher expectancy rate and lower mortality rate. Arrogate means to take or claim for one's own without right. Aversion is a feeling of strong dislike or unwillingness to do something.
12. **Option (1) is correct.**
The correct sentence is: Far, far above them, a shower of bright red sparks had flared among the stars. The part 'Far, far at the top of them' will be replaced by 'Far, far above them'. The preposition 'above' is used to connote at or to a place that is higher than someone or something.
13. **Option (1) is correct.**
The correct sentence is: Christian turned round and strode off the blackness and I got into my car. The action is that of past, so the verbs will also be in the past. Henceforth, 'strode off' is the correct choice.
14. **Option (3) is correct.**
A person who has money especially invested in business is known as a capitalist. Industrialist is a person involved in the ownership and management of industry. Minimalist is someone who takes as little action or shows as little involvement in a situation as possible. Leftist is a person with left-wing political views.
15. **Option (3) is correct.**
Virtue is behaviour showing high moral standards. So, ethically good behaviour one has is virtue.
16. **Option (2) is correct.**
Contradict means to oppose/ contravene (flout).
17. **Option (3) is correct.**
The incorrectly spelt word as 'graviety', the correct spelling is 'gravity' (the quality or state of being dignified and proper).
18. **Option (3) is correct.**
Unfortunately he is merely the head of a rabble of warlords who are stiffly rooted in the past. 'Firm' and 'stiff' are synonymous. 'Feebly' (weakly) is the opposite. Languidly means slowly and with little energy, often in an attractive way.
19. **Option (3) is correct.**
The incorrectly spelt word as 'pancehe', the correct spelling is 'panache' (flamboyant confidence of style or manner).

20. **Option (3) is correct.**
Abundant means existing or available in large quantities; plentiful. The antonym is 'meagre' (lacking in quantity or quality).
21. **Option (1) is correct.**
The correct sentence is: I wished I could teach this to Dhri as well. The modal 'could' is correct, as the blank requires a verb in the past. Moreover, 'could' expresses possibility, while 'would' expresses certainty and intent. So 'could' is the appropriate choice.
22. **Option (3) is correct.**
The correct sentence is: I wished I could teach this to Dhri as well but I feared it was too late. The action suggests that the speaker desired to teach Dhri, but was afraid that the time has passed, she cannot do it now.
23. **Option (3) is correct.**
The correct sentence is: Already he had started thinking like the men around him. The blank requires a preposition implying 'on every side of'. Hence, 'around' is correct.
24. **Option (3) is correct.**
The correct sentence is: Each day I thought less and less like the women around me. the phrase 'less and less' is correct , meaning 'at a continually decreasing rate.'
25. **Option (4) is correct.**
The correct sentence is: Each day I moved further from them into a dusky solitude. The preposition 'into' means 'toward the inside of', which is appropriate in the context.

26. **Option (4) is correct.**
Given that:
FOUR is written as ENTQ.
And LIKE is written as KHJD.
The pattern followed here is:

| | | | |
|---|---|---|---|
| F | O | U | R |
| - | - | - | - |
| E | N | T | Q |

And,

| | | | |
|---|---|---|---|
| L | I | K | E |
| - | - | - | - |
| K | H | J | D |

Similarly,

| | | | |
|---|---|---|---|
| D | O | W | N |
| - | - | - | - |
| C | N | V | M |

Hence, CNVM is the correct answer.

27. **Option (2) is correct.**
As per the given statements, following sitting arrangement can be made:
- | | | | |
|-------------|--------|--------|------------------|
| Akash | Ramesh | Pankaj | ↓ (Facing South) |
| ----- ----- | | | |
| ----- ----- | | | ↑ (Facing North) |
| Naman | Divya | Rakesh | |
- Hence, Divya is facing north and she is not sitting in either corner.

28. **Option (1) is correct.**
Given image:

| | | | | | | |
|---|---|---|---|---|---|---|
| F | D | 8 | P | C | Q | M |
| | | | | | | N |

In the mirror image, left becomes right and right becomes left. Hence, the required image is:

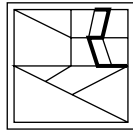
| | | | | | | |
|---|---|---|---|---|---|---|
| Q | C | P | 8 | D | F | M |
| | | | | | | N |

29. Option (2) is correct.

Given figure:



This image is embedded in the figure of option (2) as highlighted below.



30. Option (3) is correct.

Given pairs:

$$22 : 484 :: 23 : 529 :: ? : 729$$

The pattern followed here is:

$$(1^{\text{st}} \text{ term})^2 = 2^{\text{nd}} \text{ term}$$

So,

$$22^2 = 484$$

And

$$23^2 = 529$$

Similarly,

$$27^2 = 729$$

Hence, 27 is the correct answer.

31. Option (2) is correct.

Given series: 300, 271, 242, 213, 184, ?

The pattern followed here is:

$$1^{\text{st}} \text{ term} - 29 = 3^{\text{rd}} \text{ term.}$$

So,

$$300 - 29 = 271$$

$$271 - 29 = 242$$

$$242 - 29 = 213$$

$$213 - 29 = 184$$

Similarly,

$$184 - 29 = 155$$

Hence, 155 is the correct answer.

32. Option (4) is correct.

Given that: DMCGH is written as CKZCC

The pattern followed here is:

$$D \xrightarrow{-1} C$$

$$M \xrightarrow{-2} K$$

$$C \xrightarrow{-3} Z$$

$$G \xrightarrow{-4} C$$

$$H \xrightarrow{-5} C$$

So, TLFUP can be written format as:

$$T \xrightarrow{-1} S$$

$$L \xrightarrow{-2} J$$

$$F \xrightarrow{-3} C$$

$$U \xrightarrow{-4} Q$$

$$P \xrightarrow{-5} K$$

Hence, 'SJCQK' is correct code for 'TLFUP'.

33. Option (2) is correct.

Given that: 500, 497, 488, 461, 380 ?

The pattern followed here is:

$$500 - (3)^1 = 497$$

$$497 - (3)^2 = 488$$

$$488 - (3)^3 = 461$$

$$461 - (3)^2 = 380$$

$$380 - (3)^5 = 137$$

Hence, 137 is the correct answer.

34. Option (3) is correct.

Given series: $72 \div 4 \times 64 + 8 - 24 = 80$

Let's check the options by interchanging the signs.

1. \div and \times

$$72 \times 4 \div 64 + 8 - 24$$

$$\Rightarrow 72 \times 0.0625 + 8 - 24$$

$$\Rightarrow 4.5 + 8 - 24$$

$$\Rightarrow 12.5 - 24 = -11.5 \neq 80 \neq \text{RHS}$$

2. $-$ and $+$

$$72 \div 4 \times 64 - 8 + 24$$

$$\Rightarrow 18 \times 64 - 8 + 24$$

$$\Rightarrow 1152 - 8 + 24$$

$$\Rightarrow 1176 - 8 = 1168 \neq 80 \neq \text{RHS}$$

3. \div and $+$

$$72 + 4 \times 64 \div 8 - 24$$

$$\Rightarrow 72 + 4 \times 8 - 24$$

$$\Rightarrow 72 + 32 - 24$$

$$\Rightarrow 104 - 24 = 80 = \text{RHS}$$

4. $-$ and \times

$$72 \div 4 - 64 + 8 \times 24$$

$$\Rightarrow 18 - 64 + 8 \times 24$$

$$\Rightarrow 18 - 64 + 192$$

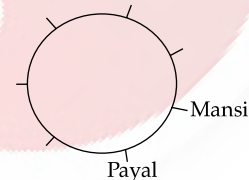
$$\Rightarrow 210 - 64 = 146 \neq 80 \neq \text{RHS}$$

Hence, option (3) is the correct answer.

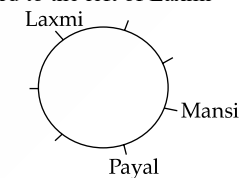
35. Option (3) is correct.

Given that: Seven girls are sitting around a circular table facing the centre.

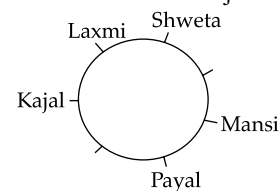
A. Payal is to the immediate left of Mansi



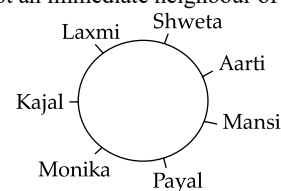
B. Mansi is third to the left of Laxmi



C. Shweta is second to the left of Kajal



D. Kajal is not an immediate neighbour of Aarti



Hence, Shweta is sitting third to the left of Monika.

36. Option (3) is correct.

Given equation: $68 \div 2 - 42 + 108 \times 12 = 103$

Let's check the options by interchanging the signs.

1. = and -

$$68 \div 2 + 108 \times 12 - 103 = 42$$

$$\Rightarrow 34 + 108 \times 12 - 103 = 42$$

$$\Rightarrow 34 + 1296 - 103 = 42$$

$$\Rightarrow 1330 - 103 = 42$$

$$\Rightarrow 1227 \neq 42 \text{ (LHS} \neq \text{RHS)}$$

2. + and -

$$68 \div 2 + 42 - 108 \times 12 = 103$$

$$\Rightarrow 34 + 42 - 108 \times 12 = 103$$

$$\Rightarrow 34 + 42 - 1296 = 103$$

$$\Rightarrow 76 - 1296 = 103$$

$$\Rightarrow -1220 \neq 103 \text{ (LHS} \neq \text{RHS)}$$

3. \div and \times

$$68 \times 2 - 42 + 108 \div 12 = 103$$

$$\Rightarrow 68 \times 2 - 42 + 9 = 103$$

$$\Rightarrow 136 - 42 + 9 = 103$$

$$\Rightarrow 145 - 42 = 103$$

$$\Rightarrow 103 = 103 \text{ (LHS} = \text{RHS)}$$

4. \div and +

$$68 + 2 - 42 \div 108 \times 12 = 103$$

$$\Rightarrow 68 + 2 - 0.38 \times 12 = 103$$

$$\Rightarrow 68 + 2 - 4.56 = 103$$

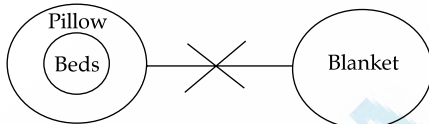
$$\Rightarrow 70 - 4.56 = 103$$

$$\Rightarrow 65.44 \neq 103 \text{ (LHS} \neq \text{RHS)}$$

Hence, option (3) is the correct answer.

37. Option (3) is correct.

As per the given statements, the following venn diagram can be made:



Conclusion I - Some pillows are beds.

As all beds are pillows, it implies some pillows are beds. So, this conclusion follows.

Conclusion II - No bed is a blanket.

As all beds are pillows and no pillow is a blanket, it implies no bed is a blanket. So, this conclusion follows.

Hence, both the conclusions I and II follows.

38. Option (3) is correct.

Given that: $AP : CN :: RT : ?$

The pattern followed here is:

$$A \xrightarrow{+2} C$$

$$P \xrightarrow{-2} N$$

Similarly,

$$R \xrightarrow{+2} T$$

$$T \xrightarrow{-2} R$$

Hence, TR is the correct answer.

39. Option (1) is correct.

Given set:

(27, 9, 3)

(125, 25, 5)

The pattern followed here is:

$$(3^{\text{rd}} \text{ term})^2 = 2^{\text{nd}} \text{ term}$$

$$(3^{\text{rd}} \text{ term})^3 = 1^{\text{st}} \text{ term}$$

Upon checking option (1), we get

(512, 64, 8)

$$8^2 = 64$$

$$8^3 = 512$$

Hence, it is the correct option.

40. Option (1) is correct.

Given that MYNB is coded as 2468.

ZNBA is coded as 5687.

And QRMA is coded as 1253.

If we compare MYNB and ZNBA we get,

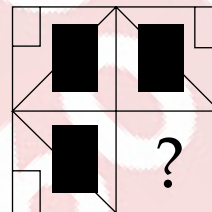
The codes for the similar alphabets in both the words, i.e. N and B are 6 and 8 (in random order), If we compare ZNBA and QRMA we get,

The code for the similar alphabet in both the words, i.e. A is 5, indicating that the only letter remaining in the word ZNBA is 'Z.'

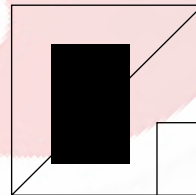
Therefore, there is only 1 digit left for 'Z' which is 7.

41. Option (2) is correct.

Given figure:



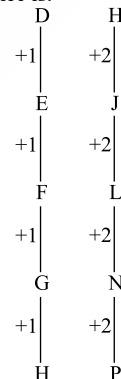
As per the pattern followed and the symmetry, the required image is:



42. Option (4) is correct.

Given that: DH, EJ, FL, GN, ?

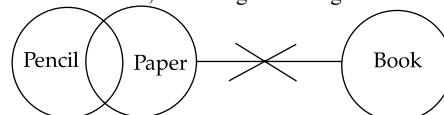
The pattern followed here is:



Hence, HP is the correct answer.

43. Option (1) is correct.

As per the statements, following venn diagram can be made:



Conclusion I - Some pencil are not book.

As some pencil are paper and no paper is a book, it implies some pencil are not book.

So, this conclusion follows.

Conclusion II - All book are pencil

As no book is a paper and some pencil are paper, it implies no pencil is a book. So, this conclusion doesn't follow.

Conclusion III - Some paper are pencil.

As some pencil are paper, it implies, some paper are pencil.

So, this conclusion follows.

Hence, both conclusion I and III follows.

44. Option (4) is correct.

Given that:

Seven students of a school, E, F, G, H, I, J and K have all obtained different scores.

E's score was less than only one student.

$$_ < _ < _ < _ < _ < E < _$$

K scored more than only one person.

$$_ < K < _ < _ < _ < E < _$$

H's score was more than I's but less than E.

$$_ < K < _ < I < H < E < _$$

Neither F nor G received the lowest score.

Which means J received the lowest score.

$$J < K < _ < I < H < E < _$$

Hence, J is the correct answer.

45. Option (1) is correct.

Given set:

Clerk Office :: ?

Relationship between clerk and office is that, clerks do their respective job/work in the office premises.

Similarly, warriors fight in the battle field.

Hence, Warrior: Battle field is the correct answer.

46. Option (3) is correct.

Cost price of first type of tea = ₹10

Cost price of second type of tea = ₹15

Let's mix both types of tea in $a : b$ ratio.

$$\therefore \text{Average cost price} = \frac{10a + 15b}{a + b}$$

According to the question

$$\frac{10a + 15b}{a + b} = 12$$

$$\Rightarrow 10a + 15b = 12a + 12b$$

$$\Rightarrow 3b = 2a$$

$$\Rightarrow \frac{a}{b} = \frac{3}{2} = 3 : 2$$

\therefore Required ratio is $3 : 2$

47. Option (2) is correct.

Let the heights of the two cylinders are $13h$ and $9h$ respectively and the ratio of the cylinder are r_1 , and r_2 respectively.

$$\therefore \text{Area of the base of second cylinder} = \pi r_2^2 = 154 \text{ cm}^2$$

According to the question

$$\frac{\pi r_1^2 \times 13h}{\pi r_2^2 \times 9h} = \frac{13}{1}$$

$$\Rightarrow \frac{\pi r_1^2 \times 13}{154 \times 9} = 13$$

$$\Rightarrow r_1^2 = \frac{9 \times 154}{\pi} = \frac{9 \times 154 \times 7}{22} = 9 \times 49$$

$$\Rightarrow r_1 = \sqrt{9 \times 49} = 3 \times 7 = 21 \text{ cm}$$

Radius of first cylinder = 21 cm

48. Option (2) is correct.

Mohit can do the work in 10 days.

Rohit can do the same work in 12 days.

$$\therefore \text{Ratio of their remunerations is } \frac{1}{10} : \frac{1}{12} = 6 : 5$$

Total remuneration = ₹ 2200

Difference of their remuneration

$$= \frac{6}{6+5} \times 2200 - \frac{5}{6+5} \times 2200$$

$$= 6 \times 200 - 5 \times 200 = ₹ 200$$

49. Option (3) is correct.

Let the number = x

\therefore Error percentage

$$= \frac{\frac{8}{5}x - \frac{5}{8}x}{\frac{5}{8}x} \times 100$$

$$= \frac{64 - 25}{25} \times 100 = 39 \times 4 = 156\%$$

50. Option (2) is correct.

Let the ages of X and Y (two years ago) are $7x$ and $5x$ respectively. Also, their ages after 2 years are $9y$ and $7y$ respectively.

According to the question

$$\frac{7x + 4}{5x + 4} = \frac{9y}{7y}$$

$$\Rightarrow 49x + 28 = 45x + 36$$

$$\Rightarrow 4x = 8$$

$$\Rightarrow x = \frac{8}{4} = 2$$

\therefore Present age of Y = $5 \times 2 + 2 = 12$ years.

51. Option (2) is correct.

Let the principal amount, $P = ₹ x$

$$\therefore \text{Simple interest} = ₹ \frac{2}{5} x$$

Rate of interest, $r = 8\%$

Let time period = t years

$$\therefore \text{Simple interest} = \frac{P \times r \times t}{100}$$

$$\Rightarrow \frac{2}{5} x = \frac{x \times 8 \times t}{100}$$

$$\Rightarrow t = \frac{200}{40} = 5$$

\therefore Time period = 5 years.

52. Option (2) is correct.

Let the marks scored by him in the three examinations are $3x$, $5x$ and $6x$ respectively.

According to the question

$$\frac{3x + 5x + 6x}{7y + 11y + 10y} \times 100 = 50$$

$$\Rightarrow \frac{14x}{28y} = \frac{1}{2}$$

$$\Rightarrow \frac{x}{2y} = \frac{1}{2}$$

$$\Rightarrow \frac{x}{y} = 1$$

...(i)

Percentage of marks obtained in the first examination

$$= \frac{3x}{7y} \times 100 < 50\%$$

Percentage of marks obtained in the second examination

$$= \frac{6x}{10y} \times 100 > 50\%$$

∴ He obtained marks more than 50% in 1 exam only.

53. Option (1) is correct.

Let the cost price of glass = ₹ x

∴ Selling price at the less of 22%

$$= ₹ \left[\frac{100 - 22}{100} \times x \right] = ₹ \frac{39x}{50}$$

According to the question

$$\frac{39x}{50} = 1287$$

$$x = 1650$$

New selling price = ₹1848

$$\therefore \text{Profit percentage} = \frac{1848 - 1650}{1650} \times 100 = 12\%$$

54. Option (4) is correct.

Let cost price = m

and selling price = n

$$\therefore 2n = 3m$$

$$\Rightarrow n = \frac{3m}{2} \quad \dots(i)$$

$$\text{Profit percentage} = \frac{n - m}{m} \times 100$$

From equation (i), we get

$$\begin{aligned} &= \frac{3 \frac{m}{2} - m}{m} \times 100 \\ &= \frac{1}{2} \times 100 = 50\% \end{aligned}$$

55. Option (2) is correct.

Sum of taxes (in lakh) of five years = $100 + 105 + 102 + 98 + 92 = 497$

$$\therefore \text{Average of the taxes (in lakhs)} = \frac{497}{5} = 99.4 \text{ lakhs}$$

56. Option (4) is correct.

Market price of article = ₹ 1080

Selling price of article after 48% discount

$$= \left[\frac{100 - 48}{100} \right] \times 1080 = ₹ 561.6$$

Effective discount after two successive discount of 25% and 20%

$$= \left[25 + 20 - \frac{25 \times 20}{100} \right] = 40\%$$

Selling price of the article after 40% discount

$$= \left[\frac{100 - 40}{100} \right] \times 1080 = ₹ 648$$

Hence, the required difference = ₹ 648 - ₹ 561.6 = ₹ 86.4

57. Option (2) is correct.

Principal amount, $P = ₹ 6000$

As per the question, simple interest in 5 years = ₹ 3600

∴ S.I. = ₹ 3600 and time period, $t = 5$ years

Let the rate of interest = $x\%$

$$\therefore \text{S.I.} = \frac{Prt}{100}$$

$$\Rightarrow 3600 = \frac{6000 \times r \times 5}{100}$$

$$\Rightarrow r = 12$$

Hence, the rate of interest = 12%

58. Option (3) is correct.

$$12 = 2 \times 2 \times 3$$

$$24 = 2 \times 2 \times 2 \times 3$$

$$36 = 2 \times 2 \times 3 \times 3$$

$$\text{HCF}(12, 24, 36) = 2 \times 2 \times 3 = 12$$

$$\text{LCM}(12, 24, 36) = 2 \times 2 \times 2 \times 3 \times 3 = 72$$

$$\frac{\text{LCM}}{\text{HCF}} = \frac{72}{12} = 6 : 1$$

59. Option (4) is correct.

Radius of cone, $r = 5$ cm

Slant height of cone, $l = 30$ cm

∴ Curved surface area of cone

$$= \pi rl = \frac{22}{7} \times 5 \times 30$$

$$= 471.4 \text{ cm}^2 \cong 471 \text{ cm}^2 \text{ approx.}$$

60. Option (2) is correct.

Let U can complete the work in " x " days.

∴ V can complete the work in " $3x$ " days.

W can complete the work in " $6x$ " days.

According to the question

$$\frac{1}{x} + \frac{1}{3x} + \frac{1}{6x} = \frac{1}{10}$$

$$\Rightarrow \frac{6 + 2 + 1}{6x} = \frac{1}{10}$$

$$\Rightarrow \frac{1}{6x} = \frac{1}{90} \Rightarrow x = 15$$

∴ W can complete the work in $6x = 6 \times 15 = 90$ days

61. Option (1) is correct.

Given equation:

$$49 \div 7 - 343 \div 7 - 243 \div 27 + 729 \div 27 + 152 \div 19$$

According to BODMAS rule, we get

$$= 7 - 49 - 9 + 27 + 8 = 42 - 58 = -16$$

62. Option (2) is correct.

Let the total number of students = x

∴ Total weight of x students = $42x$ kg

New total weight of students after exchange

$$= (42x - 48 + 44) \text{ kg}$$

$$= (42x - 4) \text{ kg}$$

According to the question

$$42x - 4 = 41.6x \Rightarrow 0.4x = 4$$

$$\Rightarrow x = \frac{4}{0.4} = 10$$

Hence, the total number of students = 10

63. Option (4) is correct.

$$\frac{96 \text{ of } 2 \div 24 + 92}{10 \times 10 \div 10} = \frac{(96 \times 2) \div 24 + 92}{10 \times 1}$$

$$= \frac{192 \div 24 + 92}{10} = \frac{8 + 92}{10}$$

$$= \frac{100}{10} = 10$$

64. Option (1) is correct.

I. Ratio of saving of Q to the saving of U
 $= 18 : 16 = 9 : 8$

II. Central angle formed by R = 10% of 360°
 $= \frac{10}{100} \times 360^\circ = 36^\circ$

III. Saving of P = $\frac{12}{100} \times 12000 = ₹ 1440$

Saving of S = $\frac{20}{100} \times 12000 = ₹ 2400$

Hence, the required percentage = $\frac{1440}{2400} \times 100 = 60\%$

So, only II and III statements are correct.

65. Option (4) is correct.

Train from Mumbai will travel distance (from 3:00 pm – 8:00 pm) in 5 hours = $20 \times 5 \text{ km} = 100 \text{ km}$

Remaining distance = $(600 - 100) \text{ km} = 500 \text{ km}$

Effective speed of both trains for remaining 500 km
 $= (60 + 20) \text{ km/hr}$

Time to travel 500 km with the effective speed

$$= \frac{500}{80} = \frac{25}{4} \text{ hr}$$

\therefore They will meet at 8:00 pm + 6 hr + 5 m = 2 : 15 am

66. Option (3) is correct.

The National Literacy Mission (NLM) was launched in 1988 with the primary objective of eradicating illiteracy and achieving 100% literacy among people in the age group of 15-35 years. It aims to impart functional literacy to individuals by equipping them with the basic literacy skills such as reading, writing, and numeracy. The NLM program collaborates with various NGOs, voluntary organizations, and local community groups to implement literacy programs at the grassroots level. It also focuses on providing post-literacy programs to ensure that individuals continue to use and build upon their newfound literacy skills.

67. Option (4) is correct.

The Indian constitution provides the right to vote under Article 326. Every citizen who has attained the age of eighteen years has the right to exercise this particular right. The 61st constitutional amendment of 1988 reduced the voting age for elections to Lok Sabha and State Legislative Assemblies from 21 to 18 years.

68. Option (3) is correct.

In 1526, the battle of Panipat was fought between Babur and Ibrahim Lodi. It was the first battle of Panipat and took place on April 20, 1526. This battle was the beginning of the Mughal empire and the end of the Delhi Sultanate. The battle involved the use of gunpowder firearms and field artillery. Babur used the tactics of Tulughma and Arba which led to the victory. Eventually, the battle was won by the Mughal forces of Babur with the death of Ibrahim Lodi. This eventually led to laying the foundation stone of the Mughal empire in the country.

69. Option (2) is correct.

Iodine is essential for the synthesis of Thyroxine. It is an essential element that enables the thyroid gland to produce thyroid hormones thyroxine (T4) and triiodothyronine (T3). The deficiency of Iodine in the body can lead to the enlargement of the thyroid gland in the neck. Also, it may lead to hypothyroidism where the thyroid is less active.

70. Option (3) is correct.

Maruti Udyog Limited is a joint sector industry. A joint sector industry is one in which both the public sector (government or government-owned entities) and the private sector (private

individuals or private companies) collaborate and invest in the establishment and operation of an industrial project. Maruti Udyog Ltd. was established in February 1981 by the Union Government of India. It was established as a joint venture with the Suzuki Motor Corporation. However, the Government made an exit from the same in 2007 by selling all its shares to Suzuki Motor Corporation.

Headquarters - New Delhi

Chairman - RC Bhargava

CEO & MD - Hishahi Takeuchi

71. Option (3) is correct.

The reign of Kumargupta I, the son and successor of Chandragupta II was one of peace and relative inactivity. Kumargupta I was the son of Chandragupta II and Queen Dhruvadevi, and was the grandson of Samudragupta. Skandagupta was the son of the Gupta emperor Kumaragupta I. Samudragupta was the second emperor of the Gupta empire. He ruled India from 300 to 380 CE. He is also known as 'Napoleon of India.' He succeeded his father Chandragupta I. Chandragupta I was the founder of the Gupta Empire.

72. Option (1) is correct.

The Ministry of Agriculture and Family Welfare introduced the Farm Laws Repeal Bill, 2021. It was introduced to repeal the three farm laws – Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020, the Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020, the Essential Commodities (Amendment) Act, 2020 – and amending the Essential Commodities Act, 1955. These laws were repealed in view of ongoing farmers' protests against these laws.

73. Option (2) is correct.

Mrinalini Sarabhai was the founder and director of the Darapana Academy of Performing Arts. She was an Indian classical dancer who was well-versed with Bharatanatyam and Kathakali. She was also the founder and director of the Darpana Academy of Performing Arts. She was married to Vikram Sarabhai, who is considered the father of the Indian space program.

74. Option (3) is correct.

The Badminton Association of India is the governing body of badminton in India. It is headquartered in New Delhi and was established in 1934. Its current president is Himanta Biswa Sharma.

75. Option (3) is correct.

Bank Rate is an instrument of monetary policy. It is the rate at which commercial banks can lend from RBI without any collateral and is defined in Section 49 of the RBI Act of 1934. Banks repay the loan with the interest amount and the tenure of this loan can be up to 28 days. Generally, the bank rate is linked to the penal rate. The RBI may adjust the bank rate to achieve various economic objectives, such as controlling inflation, promoting economic growth, or stabilizing the financial system.

76. Option (2) is correct.

A cyclone is known as a typhoon in Japan and the Philippines. It is known as a hurricane in the Atlantic Ocean. A cyclone is a large mass of air that rotates around a strong centre of low atmospheric pressure. In the Southern Hemisphere, cyclones rotate in the clockwise direction and in the Northern Hemisphere, they rotate in the anti-clockwise direction. It is dependent on factors such as temperature, humidity, wind speed, and wind direction.

77. Option (2) is correct.

The Ganesh Ratha is the finest monolithic temple situated in Mahabalipuram, Tamil Nadu. It was built during the Pallava period and is one of the ten chariots carved out of pink granite.

It is situated within a group of temples, which is a UNESCO World Heritage site.

78. Option (2) is correct.

As the name signifies, micronutrients are the nutrients required in very small or trace quantities. They constitute in total less than 1% of the dry weight of most plants and these are obtained from the soil. There are eight micronutrients namely - Iron (Fe), Copper (Cu), Zinc (Zn), Manganese (Mn), Nickel (Ni), Boron (B), Molybdenum (Mo) and Chlorine (Cl). Carbon (C), Hydrogen (H), Oxygen (O), Nitrogen (N), Phosphorous (P), Potassium (K), Calcium (Ca), Sulfur (S), and Magnesium (Mg) are the macronutrients required by the plants.

79. Option (1) is correct.

| Book | Author |
|---|---------------------|
| The Tragedy of Othello, the Moor of Venice, Hamlet, Romeo and Juliet, and Macbeth | William Shakespeare |
| Lyrical Ballads, The Prelude | William Wordsworth |
| Invented Printing Press | Johannes Gutenberg |
| A Christmas Carol, A Tale of Two Cities, Great Expectations, Little Dorrit | Charles Dickens |

80. Option (1) is correct.

The festival of Holika Dahan marks the victory of good over evil and is also known as Choti Holi.

This day symbolises the victory of good over evil as Holika died in the pyre that was lit to kill Prahalad, who was the son of the demon king Hiranyakashyap. Prahalad was a devotee of Lord Vishnu and his father was against his worshipping of the Lord Vishnu. This enraged him and he decided to kill his own son. He took the help of Holika, who was immune to fire. She tricked Prahalad to sit on a pyre with her, hoping that he would perish in the flames. However, Holika was burned while Prahalad remained safe.

81. Option (2) is correct.

Bangladesh shares its land boundaries with West Bengal, Mizoram, Meghalaya, Tripura, and Assam. India shares its land border with seven countries namely- Afghanistan and Pakistan to the North-West, China, Bhutan and Nepal to the North, Myanmar to the far East and Bangladesh to the East. Sri Lanka (from the South-East) and Maldives (from the South-West). It shares water boundaries with two countries- Sri Lanka and Maldives.

82. Option (1) is correct.

Babruddin Tyabji addressed the Congress as president in 1887. He was one of the founding members of Congress and the first Muslim president of Congress. He was the third President of the Indian National Congress. He was the founder of the Anjuman-i-Islam College in Mumbai.

83. Option (3) is correct.

The litmus solution is an indicator extracted from the plant Lichens and it is used to determine the acidity or basicity of the solution. When the litmus solution is neither acidic nor basic, its color is purple. The purple color indicates the solution is neutral. The Litmus solution turns red in the presence of an acidic solution and it turns blue in the presence of a basic solution.

84. Option (3) is correct.

NADA stands for National Anti-Doping Agency. It was established under the National Anti-doping Act 2022 and is headquartered in New Delhi. The chairman of NADA is the Union Minister of Sports. NADA is responsible for coordinating, promoting, and monitoring the doping control program in sports in all its forms.

Union Sports Minister- Anurag Singh Thakur

Director General & CEO - Ritu Sain

85. Option (1) is correct.

The Ministry of Earth Sciences is related to the 'Deep Ocean Mission', which focuses on exploring and studying the deep sea and its resources. The mission works to support the Blue Economy Initiatives of India. As a part of this mission, the focus is on the sustainable utilization of ocean resources while promoting technological and industrial development in the field of oceanography and marine biology.

The Union Minister of Earth Sciences is Sh. Kiren Rijiju.

86. Option (2) is correct.

Ali Akbar Khan is associated with Sarod. He belonged to Maihar Gharana and was a Hindustani classical musician. He popularised Indian classical music in the West and had received his training in music from his father Allauddin Khan. He was honoured with Padma Vibhushan in 1989 and was nominated five times for the Grammy Award. He was a recipient of the MacArthur Fellowship and the National Endowment for the Arts' National Heritage Fellowship.

87. Option (1) is correct.

Nilgiri Hills are the meeting point of the Eastern and Western Ghats. These are situated in the Western part of Tamil Nadu and the Southern part of Kerala. They form a part of the Western Ghats, a UNESCO heritage site. Doddabetta is the highest peak of Nilgiri Hills at an elevation of 2,637 meters. They derive the name 'Nilgiri' from the Neelakurinji flower, which blooms once every 12 years and provides a bluish haze that envelops the region. Ooty (Udhagamandalam), Coonoor, and Kotagiri etc. are situated in the Nilgiri hills.

88. Option (4) is correct.

S. Kishore has been appointed as the chairman of Staff Selection Commission (SSC). He is a 1998 batch IAS officer. SSC is an attached office of the Department of Personnel and Training (DoPT) and is responsible for recruiting staff for various posts in the various ministries and departments of the government of India and in subordinate offices.

89. Option (1) is correct.

Bharatnatyam poses are depicted on the gopurams of the Chidambaram temple. It is a Hindu temple dedicated to Lord Shiva and is situated in Chidambaram, Tamil Nadu. The temple depicts Lord Shiva as the Lord of the Bharatanatyam dance. It is one of the few temples where Shiva is represented by an anthropomorphic murthi rather than the classic, anionic Lingam. The chief architect of the temple renovation was Vishwakarma. The temple is administered by Dikshitar, who are a group of Shiavite Brahmins. They also officiate as its priest.

90. Option (3) is correct.

Sarojini Naidu was the first woman governor of Uttar Pradesh state. She was an Indian poet and political activist and is fondly called as 'Nightingale of India.' She was the first Indian woman to be president of the Indian National Congress and to be appointed governor of a state. Some of her famous works include 'In the Bazaars of Hyderabad', 'The Golden Threshold' and 'The Bird of Time' etc.