# SSC CGL

# **TEST SERIES**

DATE- \_\_/\_\_/\_
DAY-\_\_\_\_

**INSTRUCTION FOR CANDIDATE** 

TEST SERIES NO.

SG Set 10

**QUESTION- 100** 

**MARKS- 200** 

**NEGATIVE MARK- 0.50** 

**DURATION- 60 MIN.** 

- 1. Use only ball pens with black or blue ink
- 2. As soon as the examination starts, you must check this question booklet and if there is any unprinted, mutilated or partially printed page or question in it, then replace it with the correct question booklet through the examiner.
- 3. There are a total of 100 questions in this question booklet.
- 4. This is an objective test, in which four options are given for the answer to each question, you have to choose only one option with the correct answer out of these four options.
- 5. Answers to all questions are to be written on separate answer sheets.

- 6. Instructions for filling the answer sheet are written on the back side of the answer sheet, read them carefully before filling the answer sheet.
- 7. Blank pages are available in this question booklet for rough work.
- 8. Candidates cannot leave the room before the end of the examination.
- 9. After the examination is over, you can go out only with his permission after submitting the ORIGINAL COPY of the answer sheet to the invigilator.
- 10. After the completion of the examination, the candidate is allowed to take the question booklet and answer sheet with him/her.
- 11. 2 marks will be given for each correct answer and 0.50 marks will be deducted for each wrong answer.

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Total: 100 Que. SSC CGL | Tier I | Mock Test 10 Time: 60 Min.

### **General Intelligence & Reasoning**

 Select the option in which the words share the same relationship as that shared by the given pair of words.

Tissues : Histology

(a) Insects : Malacology(b) Amphibians : Herpetology(c) Mountains : Onomatology

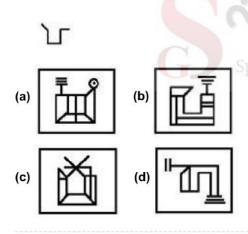
(d) Shells: Ornithology

(a) 9 (b) 11 (c) 10 (d) 12

(a) 9 (b) 11 (c) 10 (d) 12

2). Select the option figure in which the given figure is embedded (rotation is not allowed).

**6).** Select the figure that will replace the question mark(?) in the following series.



 Select the option in which the numbers are related in the same way as are the numbers of the following set. (59, 118, 295)

**(a)** (17, 34, 85) **(b)** (10, 20, 37) **(c)** (15, 34, 45)

(d) (9, 20, 25)

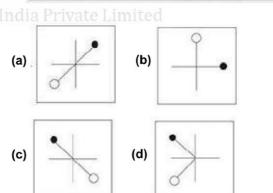
4). Select the option that is related to the third term in the same way as the second term is related to the first term.

Uttar Pradesh: Allahabad High Court:: Bihar:?

(a) Nalanda High Court (b) Patna Hight Court

(c) Gaya High Court (d) Darbhanga High Court

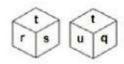
5). How many triangles are there in the given figure?



**7).** Select the number from among the given options that can replace the question mark (?) in the following series. 4096, 1024, 256, 64, ?

(a) 30 (b) 28 (c) 8 (d) 16

8). Two different positions of the same dice shown, the faces of which are marked with the letter p, q, r, s, t and u. Select the letter that will be on the face opposite to the face having the letter 'q'.





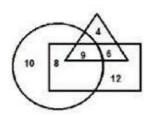
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- (a) U (b) S (c) P (d) R
- Four words have been given, out of which three are alike in some manner and one is different. Select the word that is different.
- (a) Plotter (b) Webcam (c) Microphone
- (d) Keyboard
- **10).** Select the number-pair in which the two numbers share a different relationship from that shared by the two numbers in the rest of the number-pairs.
- (a) (36, 353) (b) (49, 512) (c) (25, 216)
- (d) (64, 729)
- **11).** Select the combination of letters that when sequentially placed in the blanks of the given series will complete the series.

- (a) q, r, l, t, p, p (b) p, t, r, q, t, l (c) t, q, r, l, p, t
- (d) q, p, r, t, l, p
- **12).** In the given diagram, the circle represents 'graduates', the triangle represents 'employed people' and the rectangle represents 'rural folk'. Study the diagram carefully and answer the question that follows.



What is the number of rural unemployed graduates?

- (a) 12 (b) 8 (c) 6 (d) 9
- 13). Select the letter-cluster from among the given options that can replace the question mark(?) in the following series.
  ROAD, SMDZ, TKGV, UIJR, ?
- (a) VFNM (b) VGMN (c) VHON (d) VHNO
- 14). Four letter-clusters have been given, out of which three are alike in some manner and one is different. Select the letter-cluster that is different.
- (a) WRO (b) HAD (c) PLI (d) LHE

- **15).** Select the correct option that indicates the arrangement of the given words in the order in which they appear in an English dictionary.
  - 1). Interchangeable
  - 2). Independent
  - 3). Intentional
  - 4). Interesting
  - Interactive
- (a) 2, 5, 1, 4, 3 (b) 3, 5, 2, 4, 1 (c) 2, 3, 5, 1, 4
- (d) 1, 2, 3, 4, 5
- **16).** Out of three numbers, the ration of the first and the second numbers is 3 : 4 and the ration of the second and the third numbers is 5 : 6. If the difference between the first and the third numbers is 1125, find the average of the second and third numbers.
- (a) 2075 (b) 2750 (c) 2507 (d) 2570
- Select the correct mirror of the given combination when the mirror is placed at 'PQ' as shown.

# EXPERIENCE

- (a) EXPEREINCE
- EXPERIENCE (d)
- EXPEREINCE(a)
- (q) EXPERIENCE
- 18). In a certain code language, 'ONE' is coded as '15-28-15' and 'TWO' is coded as '20-46-45'. How will 'SIX' be coded in that language.
- (a) 19-9-24 (b) 19-18-72 (c) 38-9-72
- (d) 38-18-48
- **19).** The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown in the following figures. How would this paper look when unfolded?

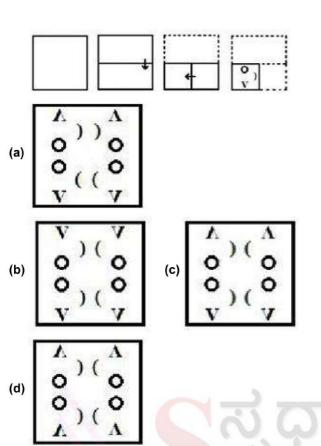
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- (a) Brother (b) Grandfather (c) Brother-in-law (d) Father
- 24). Select the option in which the numbers are related in the same way as are the numbers of the following set. (12, 60, 84)
- (a) (13, 65, 81) (b) (14, 75, 98) (c) (15, 85, 105) (d) (16, 80, 112)
- 25). Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

#### Statements:

All tractors are cars.

Some scooters are cars.

All scooter are cycles.

Conclusions:

- I. All scooters are cars.
- II. Some cars are cycles.
- III. Some tractors are cycles.
- IV. Some tractors are scooters.
- (a) Both conclusions I and II follow
- (b) Only conclusion I follow
- (c) Only conclusion II follow
- (d) Neither conclusion I nor II follows

- 20). Select the correct combination of mathematical signs that can sequentially replace the \* signs and make the equation correct. 135 \* 15 \* 3 \* 2\* 13 \* 16
- (a)  $x, +, =, \div, -$  (b)  $=, x, +, \div, -$  (c)  $+, \div, -, =, x$
- (d)  $\div$ , x, +, -, =
- 21). In a certain code language, 'RITU' is written as 'WLYX' and 'AMAN' is written as 'FPFQ'. How will 'MIRA' be written in that language?
- (a) RNWF (b) RLWD (c) PNWF (d) PLUD
- 22). Select the option that is related to the third number in the same way as the second number is related to the first number. 9:91::13:?
- (a) 99 (b) 203 (c) 132 (d) 183
- 23). Guna is the son of Shyamlal. Hemanth is the father of Manu. Guna is married to Deepa. Guna and Manu are siblings. Prathik is the brother of Deepa. Shyamlal has only one son. Roshan is the son of Guna. Prathik is the father of Kalki. Jatin is the son of Manu. Prathik has no daughters. How is Hemanth related to Roshan's father?

#### **General Awareness**

- 1). Which of the following is NOT a traditional water storage structure?
- (a) Kund (b) Tanka (c) Haryali (d) Johad
- 2). Which of the following body parts behave like a stretched rubber sheet?
- (a) Eardrum (b) Tongue (c) Nostril (d) Eye lens
- 3). Which of the following is a flightless bird?
- (a) Crane (b) Kiwi (c) Peacock (d) Hen

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(c) Dudhsagar (d) Dhuandhar

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| <ul><li>4). Who among the following issued Mahzarnaman in 1579?</li><li>(a) Jahangir (b) Shah Jahan (c) Humayun</li><li>(d) Akbar</li></ul>   | <ul><li>13). Who has recently become the brand ambassador of Swaraj Tractors?</li><li>(a) Sachin Tendulkar (b) Amitabh Bachchan</li><li>(c) Mahendra Singh Dhoni (d) Suresh Raina</li></ul>  |
|---|--|
| <ul><li>5). Which of the following is located in Gujarat?</li><li>(a) Humayun Tomb (b) Alai Darwaza</li><li>(c) Bibi ka Maqbara (d) Rani-ki-Vav</li></ul>   | <ul><li>14). Who among the following earned the sobriquet 'Bharat Kokila' from Mahatma Gandhi?</li><li>(a) Sarojini Naidu (b) Annie Besant</li></ul>   |
| <ul><li>6). Who has recently become the first Indian woman to win the 'International Emmy Award'?</li><li>(a) Ekta Kapoor (b) Shreya Ghoshal</li><li>(c) Neha Kakkar (d) Parineeti Chopra</li></ul> | <ul> <li>(c) Sucheta Kriplani (d) Toru Dutt</li> <li>15). Who is the author of the book 'Ethical Religion'?</li> <li>(a) Swami Vivekananda (b) Vinoba Bhave</li> <li>(c) Mahatma Gandhi (d) Bipan Chandra</li> </ul>   |
| <ul> <li>7). Gautamiputra Satakami was a ruler</li> <li>(a) Eastern Ganga (b) Mauryan (c) Parthian</li> <li>(d) Satavahana</li> <li>8). Recently in which country has ADB approved a</li> </ul>     | <ul> <li>16). What are the two variables whose relationship is given by the environmental Kuznets curve?</li> <li>(a) Inequality and tax revenue</li> <li>(b) Inequality and per capita income</li> <li>(c) Environmental degradation and tax revenue</li> </ul> |
| loan of 30 million USD to improve the education sector?  (a) Nepal (b) Sri Lanka (c) Bhutan  (d) Indonesia  | <ul><li>(d) Environmental degradation and per capita income</li><li>17). The liver is affected and skin and eyes turn</li></ul>  |
| <ul><li>9). Recently, 'Kakrapar Nuclear Plant' of which state has started operating at full capacity?</li><li>(a) Odisha (b) Gujarat (c) Maharashtra</li></ul>                                      | yellow due to the deposit of bile pigments. Which of the following digestive disorders is located here?  (a) Vomiting (b) Jaundice (c) Constipation  (d) Diarrhoea   |
| (d) Kerala  10) is one of the most popular folk dances of Odisha.   | <ul><li>18). Through which amendment was the Tenth Schedule added to the Constitution of India?</li><li>(a) 53rd (b) 32rd (c) 42rd (d) 43rd</li></ul>  |
| <ul><li>(a) Rauf (b) Giddha (c) Hojagiri (d) Dalkhai</li><li>11). How many oxygen atoms are present in a molecule of potassium permanganate?</li><li>(a) One (b) Three (c) Two (d) Four</li></ul>   | <ul><li>19). The Battle of Khanwa was fought between Babur and</li><li>(a) Rana Sanga (b) Todar Mal (c) Hemu</li><li>(d) Sher Shah Suri</li></ul>  |
| <ul><li>12). Which of the following waterfalls is located in Madhya Pradesh?</li><li>(a) Khandadhar (b) Shivasamudram</li></ul>   | <ul><li>20). Recently which country will host the 81st plenary meeting of ICAC in December 2023?</li><li>(a) France (b) India (c) Singapore (d) Italy</li></ul>  |

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3). Sentence of a paragraph are given below in

jumbled order. Arrange the sentence in the right

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| 21). Which of the following was NOT a part of Gondwanaland?  | order to form a meaningful and coherent paragraph.  |  |  |  |
|--|---|--|--|--|
| (a) Australia (b) South America (c) India  | A) Shopkeeper. "Not at all. It is hardly a two-<br>minute walk from here."  |  |  |  |
| (d) North America  | B) Boy: "Can you please show me the way to the post office?"  |  |  |  |
| <b>22).</b> Who among the following appoints the 'Protem' Speaker of the Lok Sabha?                              | C) Shopkeeper: "Go straight from here and take a right turn."   |  |  |  |
| (a) Chief Justice of Supreme Court (b) President   | D) Boy: "It is very far off from here?"   |  |  |  |
| (c) Chief Election Commissioner  |   |  |  |  |
| (d) Prime Minister   | (a) BCDA (b) CDAB (c) BADC (d) DCBA   |  |  |  |
| 23). The Indian Mutiny began from Meerut on 10 May 1857 and ended in:  | <ol> <li>Select the most appropriate meaning of the given idiom</li> </ol>  |  |  |  |
| (a) Delhi on 18 September 1859   | Twiddling one's thumbs  |  |  |  |
| (b) Jhansi on 15 August 1860   | (a) Feeling hungry (b) Feeling angry  |  |  |  |
| (c) Gwalior on 20 June 1858  | (c) Feeling bored (d) Feeling sad   |  |  |  |
| (d) Kolkata on 13 May 1853   | (a) i coming control  |  |  |  |
|  | E) Calaat the great annuariete ANTONIVA of the  |  |  |  |
| 24). The lowest temperature at which a substance catches fire is called its:                                     | <ol> <li>Select the most appropriate ANTONYM of the given word</li> </ol>   |  |  |  |
| (a) Ignition temperature (b) Normal temperature  | Barbaric  |  |  |  |
| (c) Boiling point (d) Melting point Spardhagur   | (d) Civilised   |  |  |  |
|  |   |  |  |  |
| <b>25).</b> Recently who has become the first woman chairperson of 'Railway Board'?                              | 6). The following sentence has been divided into<br>parts. One of them contains an error. Select the<br>part that contains the error from the given<br>options. |  |  |  |
| (a) Kiran Mani (b) Dr Sonali Ghosh   | All those students / who are participating / in the   |  |  |  |
| (c) Jaya Verma Sinha (d) Meera Singh   | play / have been notify / to stay back for rehearsal / after 3:00 p.m.  |  |  |  |
|  | (a) to stay back for rehearsal (b) have been notify   |  |  |  |
| <b>English Comprehension</b>   | (c) after 3:00 p.m. (d) who are participating   |  |  |  |
| 4). Oalast the section that are becaused as any  |   |  |  |  |
| <ol> <li>Select the option that can be used as one-<br/>word substitute for the given group of words.</li> </ol> | <ol><li>Select the most appropriate ANTONYM of the given word.</li></ol>  |  |  |  |
| An examination of a dead body to determine the cause do death  | Delight   |  |  |  |
| (a) Post-mortem (b) Analysis (c) Suicide   | (a) Joy (b) Glee (c) Sorrow (d) Pleasure  |  |  |  |
| (d) Homicide   | (a) boy (b) close (b) contow (a) headure  |  |  |  |
|  | O) The following  |  |  |  |
| 2). Select the INCORRECTLY spelt word  | 8). The following sentence has been divided into<br>parts. One of them contains an error. Select the  |  |  |  |
| (a) Cousin (b) Neice (c) Nephew (d) Uncle  | part that contains the error from the given   |  |  |  |
| (a) codom (b) Noloe (c) Nephiew (d) Onole  | options.  |  |  |  |

After entering the town, / go straight and then/ take a sharpest turn/ towards your left / to reach the mall.

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(d) Choreographer

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| <ul><li>(a) take a sharpest turn</li><li>(b) towards your left</li><li>(c) After entering the town</li><li>(d) to reach the mall</li></ul> | <b>14).</b> Select the option that expresses the given sentence in active voice.  |  |  |  |
|--|---|--|--|--|
|  | I was given a robot by him.   |  |  |  |
| 9). Sentence of a paragraph are given below in   |   |  |  |  |
| jumbled order. Arrange the sentence in the right   | (a) A robot by him was given to I.  |  |  |  |
| order to form a meaningful coherent paragraph.   | (b) He gave me a robot.   |  |  |  |
| A) Ram introduced Shyam to everyone and then served snacks to them.  | (c) A robot by him was given to me.   |  |  |  |
|  | (d) A robot was given to me by him.   |  |  |  |
| B) After he cut the cake, all of them danced for a long time.  |   |  |  |  |
| C) When Shyam reached his house, his classmates had already arrived.   | 15). Select the most appropriate option to<br>substitute the underlined segment in the given<br>sentence. If no substitution is required, select<br>'No substitution'. The news are true. |  |  |  |
| D) Ram invited his friend Shyam on his birthday.   |   |  |  |  |
| (a) ABCD (b) DBAC (c) DCAB (d) ACDB  | (a) No substitution (b) is two (a) are being two  |  |  |  |
|  | (a) No substitution (b) is true (c) are being true  |  |  |  |
| <b>10).</b> Select the option that expresses the given sentence in reported speech.  | (d) is being true   |  |  |  |
| He said to me, "It was raining all day."   | <ol><li>Select the most appropriate option to fill in<br/>the blank.</li></ol>  |  |  |  |
| (a) He told me that it had been raining all day.   | It was to everyone present that the patient   |  |  |  |
| (b) He told me it is raining all day.  | would not survive if immediate help was not received.   |  |  |  |
| (c) He told me it was raining all day. Spardhaguru I   | ndia Private Limited  |  |  |  |
| (d) He told me it has been raining all day.  | <ul><li>(a) hidden (b) unnoticed (c) apparent</li><li>(d) unseen</li></ul>  |  |  |  |
| <b>11).</b> Select the most appropriate meaning of the given idiom.  | 17). Select the INCORRECTLY spelt word  |  |  |  |
| Out of the blue  | (a) Playright (b) Plagiarise (c) Plough   |  |  |  |
| (a) Loves to wear only blue colour clothes   | (d) Playful   |  |  |  |
| (b) Beat someone black and blue  |   |  |  |  |
| (c) Completely honestly  | 18). Select the most appropriate synonym of the   |  |  |  |
| (d) Completely unexpectedly  | given word.   |  |  |  |
|  | Cadence   |  |  |  |
| <b>12).</b> Select the most appropriate synonym of the given word.   | (a) Habit (b) Pleasure (c) Freshness (d) Rhythm   |  |  |  |
| Abstain  | (-, ,   |  |  |  |
| () D ( ) () D ( ) () D   | 19). Select the most appropriate option to fill in  |  |  |  |
| (a) Reduce (b) Refrain (c) Propose (d) Accept  | the blank.  |  |  |  |
| <b>13).</b> Select the option that can be used as onewords.  | Crowds of tourists across the square all day long.  |  |  |  |
| A person who presents a radio / television programme   | <ul><li>(a) rectified (b) prodded (c) maintained</li><li>(d) flowed</li></ul>   |  |  |  |
|  |   |  |  |  |

20). Select the option that will improve the

underlined part of the given sentence. In case



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no improvement is needed select 'No improvement required'.

Bats huddle together to get warm of each other's body

- (a) warming from (b) warmth from (c) warm off
- (d) No improvement required

In the following passage, some words have been deleted. Fill in the blanks with the help of the alternatives given. Select the most appropriate option for each blank.

John was an artist (1) \_\_\_\_\_ profession. He was very (2) \_\_\_\_ at his work and could (3) \_\_\_ any subject he could think of, but circumstances forced him to (4) \_\_\_\_ in (5) \_\_\_\_ the work of renowned artists.

- Select the most appropriate option to fill in the blank 1.
- (a) From (b) About (c) Off (d) By
- 22). Select the most appropriate option to fill in the blank 2
- (a) Better (b) Good (c) Richer (d) Best
- **23).** Select the most appropriate option to fill in the blank 3.
- (a) Plaintive (b) Plant (c) Paint (d) Painted
- **24).** Select the most appropriate option to fill in the blank 4.
- (a) Synthesize (b) Specialize (c) Socialize
- (d) Sanctify
- **25).** Select the most appropriate option to fill in the blank 5.
- (a) Duplicating (b) Doubting (c) Doubling
- (d) Dominating

# **Quantitative Aptitude**

1). If 
$$x - \frac{2}{x} = 15$$
, then what is the value of  $\left(x^2 + \frac{4}{x^2}\right)$ ?

(a) 223 (b) 227 (c) 229 (d) 221

**2).** The data given in the table shows the number of boys and girls enrolled in three different streams in a school over 5 years.

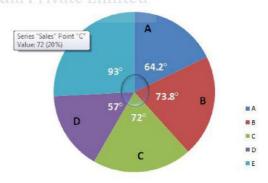
| Years | ARTS |       | SCIENCE |       | COMMERCE |       |
|-------|------|-------|---------|-------|----------|-------|
|       | Boys | Girls | Boys    | Girls | Boys     | Girls |
| 2012  | 48   | 36    | 40      | 35    | 35       | 45    |
| 2014  | 42   | 43    | 42      | 32    | 32       | 42    |
| 2016  | 45   | 42    | 38      | 30    | 36       | 38    |
| 2018  | 39   | 46    | 41      | 23    | 28       | 34    |
| 2020  | 36   | 43    | 39      | 30    | 39       | 41    |

What is the ration of the total number of boys in the year 2014 to the total number of girls in the year 2020?

- (a) 58:57 (b) 58:53 (c) 1:1 (d) 55:57
- **3).** The pie graph shows the distribution of employees working in five departments A, B, C, D and E of a company.

Total number of employees = 9000

Distribution (degree wise ) of the employees working in five departments A, B, C, D and E in a company



If the number of employees working in department A is x and the total number of employees working in department C and E is y, then the value of  $\gamma-2x^{\rm is}$ :

- (a) 725 (b) 915 (c) 850 (d) 10000
- 4). Find the sum of all the possible values of (a + b), so that the number 4a067b is divisible by 11
- (a) 16 (b) 5 (c) 11 (d) 21
- 5). Avinash has 20% less coins of different countries than Gaurav has. Gaurav has 40% more such coins than Chetan has. By what percent the number of coins which Chetan has is less number of coins which Avinawh has? (correct to one decimal place)



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(a) 12 (b) 10.5 (c) 10.7 (d) 10.6

**6).** What is the product of the average of first ten positive odd numbers and the average of first fifteen positive even numbers?

(a) 44 (b) 150 (c) 85.25 (d) 160

7). Trader A gives a single discount of 25% and Trader B gives two successive discounts of 20% and 5% on a identical item. If the discount given by a is Rs.320 more than discount given by B, then what is the marked price (in Rs.) of the item?

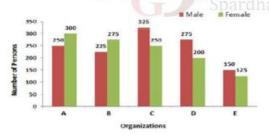
(a) 25000 (b) 32000 (c) 30000 (d) 3200

**8).** A man walking at a speed of 3km/h crosses a square field diagonally in 5 minutes. What is the area of field ()?

(a) 31250 (b) 312.5 (c) 3125 (d) 3.125

 Bar graph shows the number of males and females in five organizations A, B, C, D and E

Number of Male and Female in different Organisations

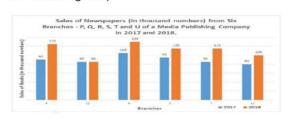


What is the ratio of the number of males working in organizations C, D and E taken together to that of females working in organizations A, B and C taken together?

(a) 11:10 (b) 46:49 (c) 10:11 (d) 49:46

10). The bar graph given below shows the sales of Newspapers (in lakh number) from six branches of a Media Publication Company during two consecutive years 2017 and 2018.

(Note: The data show below is only for mathematical exercise. They do not represent the actual figures).



Total sales of U for both the years is what percent (correct to one place of decimal) of the combined Sales of the branches Q and R for 2017 and 2018?

(a) 44.4% (b) 67.1% (c) 41.0% (d) 48.6%

11). Find the value of  $sin^2 60^\circ + cos^2 30^\circ - sin^2 45^\circ - 3sin^2 90^\circ$ .

(a)  $\frac{1}{3}$  (b) -2 (c)  $-2\frac{1}{2}$  (d)  $-1\frac{3}{4}$ 

12). Places A and B are 45 km apart from each other. A car starts from place A and another car starts from place B at the same time. If they move in same direction, they meet in 4 and a half hour and if they move towards each other, they meet in 27 minutes. What is the speed (in km/h) of the car which move faster?

(a) 56 (b) 50 (c) 45 (d) 55

13). Atul borrowed a sum of ₹12000 and agreed to repay it by paying ₹4800 at the end of first year and ₹9240 at the end of second year. What is the rate of compound interest compounded annually?

(a) 12% (b)  $\frac{8}{5}$   $\frac{9}{0}$  (c) 10% (d) 8%

14). Simplify the following expression:  $\frac{7}{12} \div \frac{1}{10} \text{ of } \frac{2}{3} - \frac{5}{3} \times \frac{9}{10} + \frac{5}{8} \div \frac{3}{4} \text{ of } \frac{2}{3}$ 

(a) -4 (b)  $3\frac{23}{36}$  (c)  $7\frac{29}{36}$  (d)  $8\frac{1}{2}$ 

15). Simplify the following expression.  $\frac{5 \left(a^6-b^6\right)^3+5 \left(b^6-c^6\right)^3+5 \left(c^6-a^6\right)^3}{2 \left(a^3-b^3\right)^3+2 \left(b^3-c^3\right)^3+2 \left(c^3-a^3\right)^3}$ 

(a) 
$$\frac{5}{2}(a^3-b^3)(b^3-c^3)(c^3+a^3)$$
 (b)  $\frac{5}{2}(a^3+b^3)(b^3-c^3)(c^3-a^3)$ 



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$$\frac{5}{2}(a^3+b^3)(b^3+c^3)(c^3+a^3)$$

$$\frac{5}{2}(a^3-b^3)(b^3+c^3)(c^3+a^3)$$

- 16). Points A, B and C are on a circle with centre O such that ∠BOC = 84°. If AC is produced to a point D such that ∠BDC = 40°, then find the measure of ∠ABD (in degrees).
- (a) 92 (b) 56 (c) 98 (d) 102

17). If 
$$y = 2x + 1$$
, then what is the value of  $(8x^3 - y^3 + 6xy)$ ?

- (a) -1 (b) 15 (c) -15 (d) 1
- 18). Eighteen men can complete a work in 14 days. Three women do as much work as two men. Five men and six women started the work and continued for 4 days. Subsequently 3 more men joined the group. In how many total days was the work completed?
- (a)  $21\frac{1}{3}$  (b) 18 (c) 22 (d)  $17\frac{1}{3}$
- 19). The value of  $\frac{sec^260^{\circ}cos^245^{\circ}+cosec^230^{\circ}}{cot30^{\circ}sec^245^{\circ}-cosec^230^{\circ}tan45^{\circ}}$

(a) 
$$3(2-\sqrt{3})$$
 (b)  $-3(2+\sqrt{3})$ 

(c) 
$$-3(2-\sqrt{3})$$
 (d)  $3(2+\sqrt{3})$ 

**20).** Monthly salaries of Anil and Kumud are in the ratio 19: 17. If Anil and Kumud get salary hike of Rs.2000 and Rs.1000 respectively, then the ratio

in their salaries becomes 8 : 7. What is the present salary of Kumud (in Rs.)?

- (a) 18000 (b) 35000 (c) 38000 (d) 34000
- 21). A shopkeeper sold an article at four-fifth of the marked price and suffered a loss of  $3\frac{1}{2}$  %.

Find the profit percent, if he sold the article at the marked price. (correct to nearest integer)

- (a) 20 (b) 18 (c) 22 (d) 21
- 22). In  $\triangle$ ABC and  $\triangle$ DEF, we have  $\frac{AB}{DF} = \frac{BC}{DE} = \frac{AC}{EF}$  then which of the following is true?
- (a) ΔDEF ~ ΔBAC (b) ΔDEF ~ ΔABC
- (c)  $\triangle CAB \sim \triangle DEF$  (d)  $\triangle BCA \sim \triangle DEF$
- 23). Points M and N are on the sides PQ and QR respectively of a triangle PQR, right angled at Q. If PN= 9 cm, MR = 7 cm, and MN = 3 cm, then find the length of PR (in cm).
- (a) 12 (b)  $\sqrt{14}$  (c) 11 (d) 13
- 24). In a circle with centre O, AB is a chord of length 10 cm. Tangents at points A and B intersect outside the circle at P. If OP = 2 OA, then find the length (in cm) of AP.
- (a) 10 (b) 15 (c) 12 (d) 12.5

25). If 
$$sin^2 \Theta = 2 sin\Theta - 1,0^{\circ} \le \Theta \le 90^{\circ}$$
, then find the value of  $\frac{1+coses\Theta}{1-cos\Theta}$ .

(a) -1 (b) 2 (c) 1 (d) -2