

**Co1**

**Steven is always \_\_\_\_\_ about showing up for work because he feels that tardiness is a sign of**

**irresponsibility**

- A. legible
- B. tolerable
- C. punctual**
- D. literal

**Candace would \_\_\_\_\_ her little sister into an argument by teasing her and calling her names**

- A. advocate
- B. provoke**
- C. perforate
- D. lamente

**As \_\_\_\_\_ beings we live each day conscious of our shortcomings and victories**

- A. sensational
- B. sentient**
- C. sentimental
- D. static

**To \_\_\_\_\_ a congressional bill the president must use his official seal on all documents**

- A. nullify
- B. patronize
- C. victimize
- D. ratify**

**The task of building the cabin was a \_\_\_\_\_ one but Rob was up to the challenge**

- A. laborious**
- B. venerable
- C. archaic
- D. cynical

**I could tell by Angelica's \_\_\_\_\_ tone that she was still very angry with me.**

- A. ingratiating

B. adjacent

C. oblique

**D. acerbic**

e. eloquent

**After years of living at a(n) \_\_\_\_\_ pace, Paola decided it was time to slow down and learn**

**how to relax.**

**A. frenetic**

B. pedestrian

C. pretentious

D. colloquial

**The hospital had an outbreak of chicken pox and was forced to \_\_\_\_\_ all patients and staff**

**to prevent more infected victims.**

A. clandestine

B. saturate

C. germinate

**D. quarantine**

**Living on several acres of land dotted with oak and maple trees makes autumn leaf-raking a \_\_\_\_\_ task.**

A. fatuous

**B. toilsome**

C. tardy

D. obsequious

**Acting in the high school play served to \_\_\_\_\_ Ander's appetite for professional acting**

A. satiate

**B. whet**

C. purport

D. incriminate

**Sean would \_\_\_\_\_ whenever it became his turn to do the dishes**

A. premeditate

**B. palter**

C. reform

D. distend

**TO CRY WOLF means**

A. To listen eagerly

**B. To give false alarm**

C. To turn pale

D. To keep off starvation

**It would take many hours of cleaning and repairing for the young family to transform the**

**\_\_\_\_\_ into a clean and comfortable little cottage**

A. territory

B. manor

**C. hovel**

D. demesne

**Ms. Lu allowed her son a great deal of \_\_\_\_\_ in spending his birthday money, because she**

**believed it should be his decision**

A. injunction

B. assimilation

**C. latitude**

D. declamation

**It was once believed that alchemists could \_\_\_\_\_ common metals to gold**

**A. transmute**

B. commute

C. execute

D. repute

**The close-up of the actor drinking the popular brand of cola in the movie was a**

**\_\_\_\_\_ display of commercialism**

A. dispassionate

B. languid

C. apathetic

D. gratuitous

**A MAN OF STRAW means**

A. A man of no substance

B. A very active person

C. A worthy person

D. An intelligent person

**Identify the meaning of the idiom “Miss the boat”.**

(A) Let too much time go by to complete a task.

(B) Long for something that you don't have.

(C) Miss out on an opportunity.

(D) Not know the difference between right and wrong.

**2-Identify the meaning of the idiom “Seeing eye to eye.”**

(A) Agreeing with somebody

(B) Treating someone with respect

(C) Paying close attention to something someone is saying

(D) Identifying a minor mistake

**Identify the meaning of the idiom “spill the beans.”**

(A) To be untidy

(B) To be very talkative

(C) To reveal something that is supposed to be kept a secret

(D) To leave a place quickly

**‘Shedding Crocodile tears’ means \_\_\_\_\_.**

(A) be in trouble

(B) insincere display of emotions

(C) be nervous

(D) find the hidden meaning

**Identify the meaning of the idiom “Can’t judge a book by its cover.”**

(A) It is easier to read a book than to protect the pages.

(B) It is hard to tell how something is simply from its outward appearance.

(C) A book's ending can't always be guessed by how it begins.

(D) It takes a long time to really know someone.

**The meaning for the idiom, 'fall on deaf ears' means:**

- (A) cannot remember
- (B) people would not listen to**

- (C) to be in trouble
- (D) find the hidden meaning

**The phrase, "A hard nut to crack" means \_\_\_\_\_.**

- (A) an interesting problem
- (B) a difficult problem**

- (C) a unique problem
- (D) a simple problem

**Choose the one which best expresses the meaning of the idioms and phrases: Ram sold**

**their house because it was a real white elephant.**

- (A) A rare find
- (B) Very expensive and useless**

- (C) A very big one
- (D) A useless one

**Choose the one which best expresses the meaning of the idioms and phrases: They were having a whale of time dancing and singing.**

- (A) To enjoy yourself very much**
- (B) To enjoy life
- (C) To enjoy leisure time
- (D) To enjoy with loved ones

**Identify the meaning of the idiom "a bed of roses".**

- (A) An easy situation**
- (B) A fragrant place
- (C) A tough option
- (D) An impossible situation

**What does BAD BLOOD imply**

- A. Impure blood
- B. Thick blood
- C. Ill feelings**

D. Harmful blood

**A disease prevailing in a locality**

A. epidemic

B. exotic

C. endemic

D. systemic

**To remove all objectionable matter**

A. expurgate

B. censure

C. edit

D. photoshop

**Sword is related to Slaughter in the same way as Scalpel is related to**

A. Murder

B. Stab

C. Surgery

D. Chopping

**Chef is related to Restaurant in the same way as Druggist is related to**

A. Medicine

B. Pharmacy

C. Store

D. Chemist

**One who collects coins is a**

A. Numismatist

B. Somnambulist

C. Philatelist

D. Chauninist

**Act of deceiving somebody in order to make money is called**

A. Pickpocket

B. Theft

C. Robbery

D. Fraud

**Lack of skill is**

A. insistence

**B. ineptness**

C. insolence

D. inertness

**Poetry:Rhyme::Philosophy:\_\_\_\_\_**

A. imagery

B. music

C. bi-law

**D. theory**

**Marshal:Prisoner::Principal:\_\_\_\_\_**

A. teacher

B. president

C. doctrine

**D. student**

**Mend:Sewing::Edit:\_\_\_\_\_**

A. darn

B. repair

**C. manuscript**

D. makeshift

**Choose the correct statement**

A. Do not make friend with selfish people

B. Do not make friendship with selfish people

**C. Do not make friends with selfish people**

D. Do not make friendly with selfish people

**Some students are \_\_\_\_ at copying**

A. adapt

**B. adept**

C. adopt

D. edept

**Choose the correct statement**

- A. The hooligans broke in the factory
- B. The hooligans broke onto the factory
- C. The hooligans broke at the factory

**D. The hooligans broke into the factory**

**What they are doing does not seem \_\_\_\_\_ working**

- A. be
- B. being
- C. been

**D. to be**

**She is going to quit her job \_\_\_\_\_ they give her a pay rise**

- A. or
- B. until

**C. unless**

D. providing

**Near the historic monument, there is a bridge \_\_\_\_\_ the Thames River**

A. above

**B. over**

C. off

D. towards

**Katherine has finished her work, now she is \_\_\_\_\_ home**

**A. going**

B. going to

C. going to the

D. going towards the

**Co4**

**01. How many 5's are there in the following sequence which are immediately followed by 3**

**but not immediately preceded by 7 ?**

**8 9 5 3 2 5 3 8 5 5 6 8 7 3 3 5 7 7 5 3 6 5 3 3 5 7 3 8**

A. One B. Two **C. Three** D. Four E. More than four

ANSWER: C



**02. In the series,**

**6 4 1 2 2 8 7 4 2 1 5 3 8 6 2 1 7 1 4 1 3 2 8 6**

**how many pairs of successive numbers have a difference of 2 each?**

A. 4 B. 5 **C. 6** D. 7

ANSWER: C

**03. Rahul ranked ninth from the top and thirty eighth from the bottom in a class. How many**

**students are there in the class ?**

A. 45 **B. 46** C. 47 D. 48

ANSWER: B

**04. In a row of 21 girls, when Monika was shifted by four places towards the right, she became 12th from the left end. What was her earlier position from the right end of the row?**

A. 9th B. 10th C. 11th D. 12<sup>th</sup> **E. 14th**

ANSWER: E

**05. In a row of boys, Deepak is seventh from the left and Madhu is twelfth from the right. If**

**they interchange their positions, Deepak becomes twenty-second from the left. How many boys are there in the row?**

A. 19 B. 31 **C. 33** D. Cannot be determined E. None of these

ANSWER: C

**06. Satish remembers that his brother's birthday is after fifteenth but before eighteenth of**

**February whereas his sister kajal remembers that her brother's birthday is after sixteenth**

**but before nineteenth of February. On which day in February is Satish's brother's birthday?**

A. 16th **B. 17th** C. 18th D. 19th E. None of these

ANSWER: B

**07. A bus for Delhi leaves every thirty minutes from a bus stand. An enquiry clerk told a**

**passenger that the bus had already left ten minutes ago and the next bus will leave at 9.35 a.m. At what time did the enquiry clerk give this information to the passenger ?**

A. 9.10 a.m. B. 8.55 a.m. C. 9.08 p.m. D. 9.05 a.m. **E. 9.15 a.m.**

ANSWER: E

Symbols and Notations:

**08. If '+' stands for division, '÷' stands for multiplication, 'x' stands for subtraction and '-'**

**stands for addition, which one of the following is correct?**

A.  $18 \div 6 - 7 + 5 \times 2 = 20$

**B.  $18 + 6 \div 7 \times 5 - 2 = 18$**

C.  $18 \times 6 + 7 \div 5 - 2 = 16$

D.  $18 \div 6 \times 7 + 5 - 2 = 22$

ANSWER: B

**09. If '+' stands for multiplication, 'x' stands for division, '-' stands for addition and '÷' stands for subtraction, what is the answer for the following equation?**

$20 - 5 \div 18 \times (3 + 2) = ?$

A. 20

B. 18

C. 108

**D. 22**

ANSWER: D

**10. If L = +, M = -, N = x, P = ÷, then  $5 N 5 P 5 L 5 M 5 = ?$**

A. 0

**B. 5**

C. 10

D. 15

ANSWER: B

**11. Which alternative clearly indicates the rule followed in the following set of numbers?**

**$7\ 4\ 8\ 2 = 24$**

A. -, x, x

B. x, +, ÷

**C. x, -, ÷**

D. x, ÷, -

ANSWER: C

**12. In the following question, identify the correct response from the given premises stated**

**according to following symbols.  $12\ 3\ 4\ 8 = 0$**

A.  $- + +$

B.  $\div + \div$

C.  $- - -$

D.  $\div + -$

ANSWER: D

**13. After interchanging  $\div$  and  $=$ , 2 and 3, which one of the following statements becomes**

**correct?**

A.  $15 = 2 \div 3$

B.  $5 \div 15 = 2$

C.  $2 = 15 \div 3$

D.  $3 - 2 \div 15$

ANSWER: B

**14. Select the correct combination of Mathematical signs to replace \* signs and to balance the**

**given equation  $4 * 6 * 6 * 2 * 20$**

A.  $+ \div = \div$

B.  $x - + =$

C.  $+ - = \div$

D.  $- + = \div$

ANSWER: B

Nonverbal Reasoning:

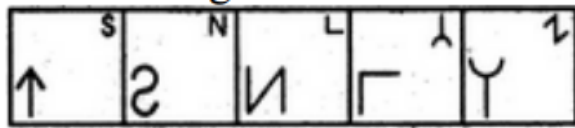
Each of the following questions consists of five figures marked A, B, C, D and E called the Problem Figures followed by five other figures marked 1, 2, 3, 4 and 5 called the Answer Figures. Select a figure from amongst the Answer Figures which will continue the same series as established by the five Problem Figures.

**15. Select a figure from amongst the Answer Figures which will continue the same series as**

**established by the five Problem Figures.**

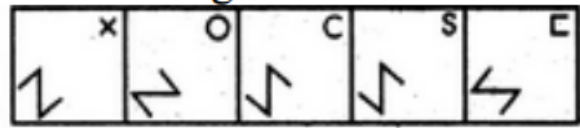
Problem Figures: Answer Figures:

Problem Figures:



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

Answer Figures:



(1) (2) (3) (4) (5)

(A) (B) (C) (D) (E) (1) (2) (3) (4) (5)

A. 1

B. 2

C. 3

D. 4

E. 5

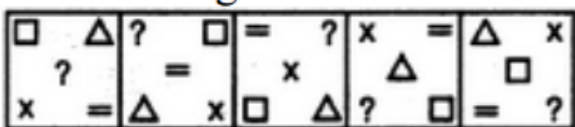
ANSWER: C

16. Select a figure from amongst the answer figures which will continue the same series as

established by the five Problem Figures.

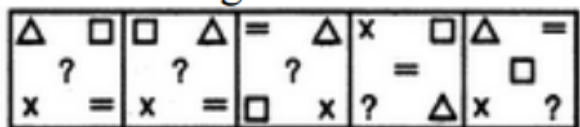
Problem Figures: Answer Figures:

Problem Figures:



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

Answer Figures:



(1) (2) (3) (4) (5)

(A) (B) (C) (D) (E) (1) (2) (3) (4) (5)

A. 1

B. 2

C. 3

D. 4

E. 5

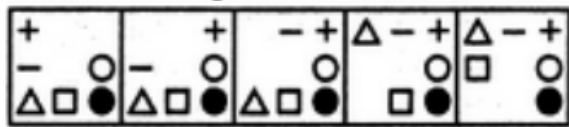
ANSWER: B

17. Select a figure from amongst the Answer Figures which will continue the same series as

established by the five Problem Figures.

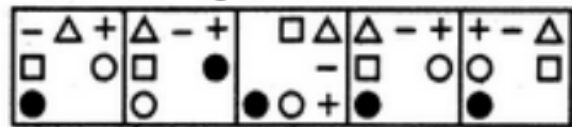
Problem Figures: Answer Figures:

Problem Figures:



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

Answer Figures:



(1) (2) (3) (4) (5)

(A) (B) (C) (D) (E) (1) (2) (3) (4) (5)

A. 1

B. 2

C. 3

D. 4

E. 5

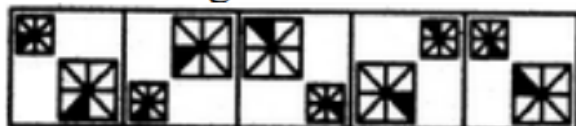
ANSWER: D

18. Select a figure from amongst the Answer Figures which will continue the same series as

established by the five Problem Figures.

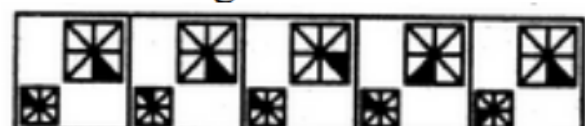
Problem Figures: Answer Figures:

Problem Figures:



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

Answer Figures:



(1) (2) (3) (4) (5)

(A) (B) (C) (D) (E) (1) (2) (3) (4) (5)

A. 1

B. 2

C. 3

D. 4

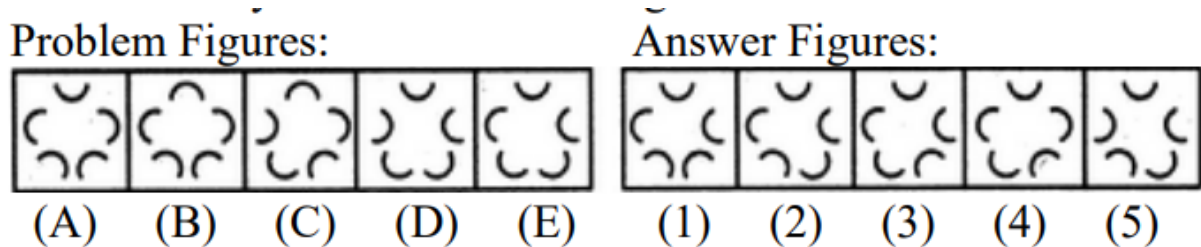
E. 5

ANSWER: A

19. Select a figure from amongst the Answer Figures which will continue the same series as

established by the five Problem Figures.

Problem Figures: Answer Figures:



(A) (B) (C) (D) (E) (1) (2) (3) (4) (5)

A. 1

B. 2

C. 3

D. 4

E. 5

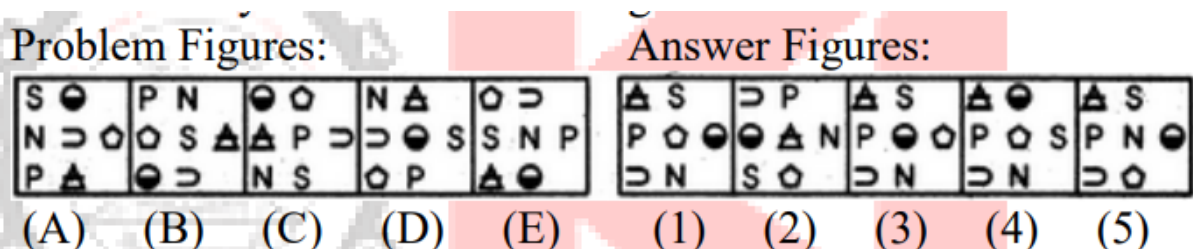
ANSWER: A

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20. Select a figure from amongst the Answer Figures which will continue the same series as

established by the five Problem Figures.

Problem Figures: Answer Figures:



(A) (B) (C) (D) (E) (1) (2) (3) (4) (5)

A. 1

B. 2

C. 3

D. 4

E. 5

ANSWER: A

**21. Select a figure from amongst the Answer Figures which will continue the same series as**

**established by the five Problem Figures.**

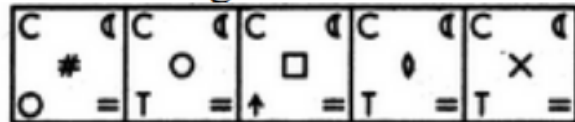
**Problem Figures: Answer Figures:**

**Problem Figures:**



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

**Answer Figures:**



(1) (2) (3) (4) (5)

(A) (B) (C) (D) (E) (1) (2) (3) (4) (5)

A. 1

B. 2

C. 3

**D. 4**

E. 5

ANSWER: D

Connectives:

**22. Which of the following logic connectives is equivalent to  $\sim(p \rightarrow q)$**

A.  $p \vee \sim q$

**B.  $p \wedge \sim q$**

C.  $\sim p \vee \sim q$

D.  $\sim p \wedge q$

ANSWER: B

**23. A statement is said to tautologically imply a statement if and only if \_\_\_\_\_ is a tautology.**

A.  $B \rightarrow A$

B.  $A \rightarrow B$

C.  $A \wedge B$

D.  $A \vee B$

ANSWER: B

**24. If truth values of a statement formula A is equal to the truth values of a statement formula**

**B, then which of the following is true?**

A. A is equivalence to B

B. B is equivalence to A

C. A and B are said to be equivalent.

D. All of the above.

ANSWER: D

**25. If final column of a truth table of a given statement formula has all F then it is called**

A. A contradiction

B. A tautology

C. A negation statement

D. None of the above

ANSWER: A

**26. Consider the statements. P: 'A' is rich and Q: 'A' is happy. Then the symbolic form of**

**the statement "'A' is poor but happy" is**

A.  $P \wedge Q$

B.  $\neg P \wedge Q$

C.  $\neg P \vee Q$

D.  $P \vee Q$

ANSWER: B

**27. If truth value of statement P is T and statement Q is F then the truth value of**

**$(\neg P \wedge \neg Q) \vee P$  is**

A. T

B. F

C. T or F



D. None of the above

ANSWER: A

**28. Let P be the statement "If X, then Y." Which of the following statements describes the**

**inverse of P?**

A. If Y, then X

B. If X, then not Y

C. If not Y, then not X

**D. If not X, then not Y**

ANSWER: D

Blood relations and Data Sufficiency:

Directions: Each question given below has a problem and two statements numbered I and II giving certain information. You have to decide if the information given in the statements is sufficient for answering the problem. Indicate your answer as

- (a) if the data in statement I alone are sufficient to answer the question;
- (b) if the data in statement II alone are sufficient answer the question;
- (c) if the data either in I or II alone are sufficient to answer the question;
- (d) if the data given in both the statements together are not sufficient to answer the question;
- (e) if the data in both the statements together are needed.

**29. What is Reena's rank in the class?**

**I. There are 26 students in the class.**

**II. There are 9 students who have scored less than Reena.**

**ANSWER: E**

**30. Who is the father of M?**

**I. A and B are brothers.**

**II. B's wife is sister of M' s wife.**

**ANSWER: D**

**31. What day is the fourteenth of a given month?**

**I. The last day of the month is a Wednesday.**

**II. The third Saturday of the month was seventeenth.**

**ANSWER: B**

**32. Among four friends A, B, C and D, who is the heaviest ?**

**I. B is heavier than A, but lighter than D.**

**II. C is lighter than B.**

**ANSWER: E**

**33. It is 8.00 p.m., when can Hemant get next bus for Ramnagar from Dhanpur ?**

**I. Buses for Ramnagar leave after every 30 minutes, till 10 p.m.**

**II. Fifteen minutes ago, one bus has left for Ramnagar.**

**ANSWER: E**

**34. Pointing out to a lady, Rajan said, " she is the daughter of the woman who is the mother of the husband of my mother." Who is the lady to Rajan?**

**A. Aunt**

B. Sister

C. Cousin

D. Sister in law

ANSWER: A

**35. Pointing to a man in the photograph, Asha said "His mothers only daughter is my mother." How is Asha related to that man?**

A. Aunt

B. Sister

**C. Niece**

D. Sister in law

ANSWER: C

**36. If A+B means A is the sister of B; A-B means A is the brother of B; A\*B means A is the**

**daughter of B. Which of the following shows the relation that E is the maternal uncle of**

**D?**

A.  $D+F \cdot E$

B.  $D-F \cdot E$

**C.  $D \cdot F + E$**

D.  $D \cdot F - E$

ANSWER: C

### Co3

Progressions:

**01. The 54th and 4th terms of an A.P. are — 61 and 64; find the 23rd term.**

- A. 12
- B.  $20\frac{1}{4}$
- C.  $26\frac{1}{2}$
- D.  $16\frac{1}{2}$

**02. The first term of a series is 5, the last 45, and the sum 400: find the number of terms, and the common difference.**

- A.  $n = 14, d = 2(1/3)$
- B.  $n = 15, d = 2(2/5)$
- C.  $n = 16, d = 2(2/3)$
- D.  $n = 17, d = 2(2/5)$

**03. Find the sum of the geometric series  $2 + 6 + 18 + 54 + \dots$  where there are 6 terms in the series.**

- A. 728
- B. 828
- C. 926
- D. 1016

**04. Find the sum of the geometric series  $8 - 4 + 2 - 1 + \dots$  where there are 5 terms in the series.**

- A.  $7\frac{1}{2}$
- B.  $10\frac{1}{4}$
- C.  $5\frac{1}{2}$
- D.  $8\frac{1}{4}$

**05. How many terms are there in the geometric progression 2, 4, 8, ..., 128?**

- A. 5
- B. 6

C.  $7\frac{1}{2}$

D. 7

**06. In the A.P. -3, -1/2, 2 .... The 11th term is**

A. 42

B. -12

C. 22

D. 65

**07. Does 210 falls in the AP: 21, 42, 63, 84...? If yes, then on which term?**

A. 12th

B. 10th

C. 5th

D. 7th

**08. Find the sum of the following infinite G. P.**

A.  $\frac{1}{2}$

B. 1

C.  $\frac{1}{3}$

D.  $\frac{1}{5}$

**09. Insert three geometric means between 2 and  $8\frac{1}{8}$ .**

A. 3,  $\frac{9}{2}$ ,  $-\frac{27}{4}$

B. - 3,  $\frac{9}{2}$ ,  $\frac{27}{4}$

C. 3,  $\frac{9}{2}$ ,  $\frac{27}{4}$

D. 3,  $\frac{9}{2}$ ,  $\frac{27}{8}$

**10. The arithmetic mean between two numbers is 75 and their geometric mean is 21. Find the numbers.**

A. 133 and 17

B. 63 and 87

C. 3 and 147

D. 73 and 77

Mensuration:

**11. One side of a rectangular field is 15 m and one of its diagonals is 17 m. Find the area of**

**the field.**

A. 100 m<sup>2</sup>

**B. 120 m<sup>2</sup>**

C. 140 m<sup>2</sup>

D. 160 m<sup>2</sup>

**12. A lawn is in the form of a rectangle having its sides in the ratio 2:3. The area of the lawn**

**is  $\frac{1}{6}$**

**hectares. Find the length and breadth of the lawn.**

A. 30 m

B. 40 m

**C. 50 m**

D. 60 m

**13. Find the cost of carpeting a room 13 m long and 9 m broad with a carpet 75 cm wide at**

**the rate of Rs. 12.40 per square metre.**

**A. Rs. 1734.40**

B. Rs. 1834.40

C. Rs. 1934.40

D. Rs. 2034.40

**14. If the diagonal of a rectangle is 17 cm long and its perimeter is 46 cm, find the area of the rectangle.**

**A. 100 cm<sup>2</sup>**

B. 120 cm<sup>2</sup>

C. 140 cm<sup>2</sup>

D. 160 cm<sup>2</sup>

**15. The length of a rectangle is twice its breadth. If its length is decreased by 5 cm and**

**breadth is increased by 5 cm, the area of the rectangle is increased by 75 sq.cm. Find the**

**length of the rectangle.**

A. 10 cm

B. 20 cm

C. 30 cm

**D. 40 cm**

**16. Find the volume and surface area of a cuboid 16 m long, 14 m broad and 7 m high.**

A. Volume = 1268  $m^3$  Surface area = 568  $cm^2$

B. Volume = 1368  $m^3$  Surface area = 668  $cm^2$

C. Volume = 1468  $m^3$  Surface area = 768  $cm^2$

**D. Volume = 1568  $m^3$  Surface area = 868  $cm^2$**

**17. Find the length of the longest pole that can be placed in a room 12 m long, 8 m broad and 9 m high.**

A. 16 m

**B. 17 m**

C. 18 m

D. 19 m

**18. The volume of a wall, 5 times as high as it is broad and 8 times as long as it is high, is**

**12.8 cu. metres. Find the breadth of the wall.**

A. 38 m

**B. 40 m**

C. 42 m

D. 44 m

**19. Find the number of bricks, each measuring 24 cm x 12 cm x 8 cm, required to construct a wall 24 m long, 8 m high and 60 cm thick, if 10 % of the wall is filled with mortar?**

A. 36000

B. 45000

C. 54000

D. 63000

**20. Water flows into a tank 200 m x 150 m through a rectangular pipe 1.5 m x 1.25 m @ 20 kmph. In what time (in minutes) will the water rise by 2 metres?**

A. 86 min

B. 96 min

C. 104 min

D. 106 min

Quadratic Equations & Inequalities:

**21. Find the nature of roots of  $2x^2 + x + 3 = 0$ .**

A. roots are real

B. roots are real, rational and unequal

C. roots are real, rational and equal

D. roots are conjugate complex numbers

**22. Find the nature of the roots of  $4x^2 - 20x + 25 = 0$ .**

A. roots are real

B. roots are real, rational and unequal

C. roots are real, rational and equal

D. roots are conjugate complex numbers

**23. Find the nature of the roots of  $3x^2 + 7x + 2 = 0$ .**

A. roots are real

B. roots are real, rational and unequal

C. roots are real, rational and equal

D. roots are conjugate complex numbers

**24. For what values of  $x$  the expression  $-7x^2 + 8x - 9$  is negative?**

A. for all  $x \in R$ ,  $f(x)$  is negative

B. for all  $x \in R$ ,  $f(x)$  is positive

C. for all  $x \in R$ ,  $f(x) = 0$

D. for all  $x \in R$ ,  $f(x) \geq 0$

**25. For what values of  $x$  the expression  $x^2 - 5x + 14$  is positive?**

A. for all  $x \in R$ ,  $f(x)$  is negative

B. for all  $x \in R$ ,  $f(x)$  is positive

C. for all  $x \in R$ ,  $f(x) = 0$

D. for all  $x \in R$ ,  $f(x) \geq 0$

**26. For what values of  $x$  the expression  $x^2 - 4x - 32$  is positive?**

A.  $f(x) > 0$  for  $x > 8$  and  $x < -4$

B.  $f(x) > 0$  for  $x > 6$  and  $x < -4$

C.  $f(x) > 0$  for  $x > 4$  and  $x < -8$

D.  $f(x) > 0$  for  $x > 12$  and  $x < -8$

**27. Find the quadratic equation whose one root is  $3 - i\sqrt{2}$ .**

A.  $x^2 - 6x + 11 = 0$

B.  $x^2 - 5x + 11 = 0$

C.  $x^2 - 4x + 12 = 0$

D.  $x^2 - 6x + 12 = 0$

**28. Find the quadratic equation whose one root is  $1 + \sqrt{5}$ .**

A.  $x^2 - x - 4 = 0$

B.  $x^2 - 2x - 4 = 0$

C.  $x^2 - 3x - 4 = 0$

D.  $x^2 - 4x - 5 = 0$

**29. A train travels 360 kilometres at a consistent speed. It would have taken 1 hour less to**



travel the same distance if the pace had been increased by 5 km/h. Determine the train's

speed.

A. 30 km/hr

B. 40 km/hr

C. 50 km/hr

D. 60 km/hr

30. If one the roots of the equation  $px^2 + qx + r = 0$  is three times the other, then which one of the following relations is correct ?

A.  $p = q + r$

B.  $q^2 = 24 pr$

C.  $p + q + r = 1$

D.  $3q^2 = 16 pr$

Logarithms:

31. Evaluate  $\log_5 3 \times \log_{27} 25$

A.  $1/3$

B.  $2/3$

C.  $3/4$

D.  $5/6$

32. Evaluate  $\log_9 27 - \log_{27} 9$

A.  $1/3$

B.  $2/3$

C.  $3/4$

D.  $5/6$

33. Simplify:  $(\log 75/16 - 2 \log 5/9 + \log 32/243)$

A.  $\log 2$

B.  $\log 3$

C.  $\log 4$

D.  $\log 5$

34. Find the value of  $x$  which satisfies the relation

$$\log_{10} 3 \times \log_{10} (4x + 1) = \log_{10} (x + 1) + 1$$

- A.  $5/2$
- B.  $5/4$
- C.  $7/2$
- D.  $7/4$

**35. Simplify:  $[ 1/\log_{xy} (xyz) + 1/\log_{yz} (xyz) + 1/\log_{zx} (xyz) ]$**

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

**36. If  $\log_{10} 2 = 0.30103$ , find the value of  $\log_{10} 50$ .**

- A. 1.69897
- B. 2.69897
- C. 3.69897
- D. 4.69897

**37. The value of  $\log_{10} (0.0001)$  is:**

- A.  $1/4$
- B.  $-1/4$
- C. -4
- D. 4

**38. The value of  $\log_{0.01} 1000$  is:**

- A.  $1/3$
- B.  $-1/3$
- C.  $3/2$
- D.  $-3/2$

**39. If  $\log_x y = 100$  and  $\log_2 x = 10$ , then the value of  $y$  is:**

- A.  $2^{10}$
- B.  $2^{100}$
- C.  $2^{1000}$

**D.  $2^{10000}$**

**40. If  $\log 2 = 0.30103$ , the number of digits in  $4^{50}$  is**

A. 30

**B. 31**

C. 100

D. 200

Data Interpretation and Data Sufficiency:

41. The following table gives the sales of batteries manufactured by a company over the years.

Number of Different Types of Batteries Sold by a Company Over the Years

(Numbers in Thousands)

**1. What was the approximate percentage increase in the sales of 55AH batteries in 1998**

**compared to that in 1992?**

A. 28%

B. 31%

C. 33%

**D. 34%**

**2. The total sales of all the seven years is the maximum for which battery?**

A. 4AH

B. 7AH

**C. 32AH**

D. 35AH

**3. What is the difference in the number of 35AH batteries sold in 1993 and 1997?**

A. 24000

B. 28000

C. 35000

**D. 39000**

**4. The percentage of 4AH batteries sold to the total number of batteries sold was maximum in the year?**

A. 1994

B. 1995

C. 1996

**D. 1997**

**5. In case of which battery there was a continuous decrease in sales from 1992 to 1997?**

A. 4AH

**B. 7AH**

C. 32AH

D. 35AH

**42. The bar graph given below shows the foreign exchange reserves of a country (in million US \$) from 1991 - 1992 to 1998 - 1999.**

**01. The ratio of the number of years, in which the foreign exchange reserves are above the average reserves, to those in which the reserves are below the average reserves is?**

A. 2:6

B. 3:4

**C. 3:5**

D. 4:4

**02. The foreign exchange reserves in 1997-98 was how many times that in 1994-95?**

A. 0.7

B. 1.2

C. 1.4

**D. 1.5**

**03. For which year, the percent increase of foreign exchange reserves over the**

**previous year, is the highest?**

**A. 1992-93**

B. 1993-94

C. 1994-95

D. 1996-97

**04. The foreign exchange reserves in 1996-97 were approximately what percent of the average foreign exchange reserves over the period under review?**

A. 95%

B. 110%

C. 115%

**D. 125%**

**05. What was the percentage increase in the foreign exchange reserves in 1997-98 over 1993-94?**

**A. 100**

B. 150

C. 200

D. 620