SECTION-I : GAT

1. \((1-1/3) (1-1/4) (1-1/5) \ldots (1-1/n)\) is equal to:

   \[
   \frac{1}{n} \quad \frac{2}{n} \quad \frac{2}{n(n+1)} \quad \frac{2(n-1)}{n}
   \]

   (a) \(\frac{1}{n}\) \quad (b) \(\frac{2}{n}\) \quad (c) \(\frac{2}{n(n+1)}\) \quad (d) \(\frac{2(n-1)}{n}\)

2. If \((1 \times 2 \times 3 \times 4 \times \ldots \times n) = n!\), then \((14! - 13! - 12!)\) is equal to:

   a) \(14 \times 12 \times (12!\)  \quad b) \(14 \times 12 \times (13!\)
   c) \(14 \times 13 \times (13!\)  \quad d) \(13 \times 12 \times (12!\)

3. A 3-digit number 4a3 is added to another 3-digit number 984 to give the four digit number 13b7, which is divisible by 11. Then \((a+b)\) is:

   a) 10 \quad b) 11 \quad c) 12 \quad d) 15

4. The product of two numbers is \(y\). If one of the numbers is \(x\) then the other one is:

   \[
   \frac{x}{y^2} \quad \frac{x^2}{y^2} \quad \frac{x^3}{y^2} \quad \frac{y}{y^2}
   \]

   a) \(\frac{x^3}{y}\) \quad b) \(\frac{x^2}{y}\) \quad c) \(\frac{x^3}{y}\) \quad d) \(\frac{y}{y}\)

5. When \(n\) is divided by 4, the remainder is 3. What is the remainder when \(2n\) is divided by 4?

   a) 1 \quad b) 2 \quad c) 3 \quad d) 6

6. The traffic lights at three different road crossings change after every 48 seconds, 72 sec and 108 sec respectively. If they all change simultaneously at 8:20:00 hours, then they will again change simultaneously at:

   a) 8:27:12 hrs. \quad b) 8:27:24 hrs. \quad c) 8:27:36 hrs. \quad d) 8:27:48 hrs.

7. Which of the following fraction is less than \(7/8\) and greater than \(1/3\)?

   a) \(1/4\) \quad b) \(23/24\) \quad c) \(11/12\) \quad d) \(17/24\)

8. If \(\sqrt[3]{0.05} \times 0.5 \times a = 0.5 \times 0.05 \times \sqrt{b}\), then \(a/b\) is equal to:

   a) 0.0025 \quad b) 0.025 \quad c) 0.25 \quad d) None

9. If 1/8 of a pencil is black, \(\frac{1}{2}\) of the remaining is white, and the remaining 3 \(\frac{1}{2}\) cm. is blue, then the total length of the pencil is:

   a) 6 cm \quad b) 7 cm \quad c) 8 cm \quad d) 11 cm

10. If \(a/b = 1/5\) then \(5a+2b\) is equal to:

    \[
    \frac{5a}{2b}
    \]

    a) 3 \quad b) \(-3\) \quad c) \(-5\) \quad d) -1
11. In a group of cows and hens, the numbers of legs are 14 more than twice the number of heads. The number of cows is -
   a) 5   b) 7   c) 10   d) 12

12. If \( \sqrt{1+ \frac{x}{144}} = \frac{13}{12} \), then \( x \) is equal to:
   a) 1   b) 12   c) 13   d) 25

13. \( \frac{\sqrt{7} + \sqrt{5}}{\sqrt{7} - \sqrt{5}} \) + \( \frac{\sqrt{7} - \sqrt{5}}{\sqrt{7} + \sqrt{5}} \) is equal to:
   a) 2 (\( \sqrt{7} + \sqrt{5} \))   b) 2 (\( \sqrt{7} - \sqrt{5} \))   c) 2   d) 12

14. On a certain day, temperatures recorded in a city are as follows:
   Time:  6 a.m.  12 a.m.  6 p.m.  12 p.m.
   Temp.  12.4°C  18.8°C  16.6°C  10°C
   The average temperature for the day is:
   a) 12°C   b) 14.45°C   c) 15.2°C   d) 15.8°C

15. The average salary per month of 30 employees in a company is Rs.4000/-. If the manager’s salary is added, the average salary increases to Rs.4300/-. What is the salary of the Manager?
   a) Rs.10000/-   b) Rs.13000/-   c) Rs.12000/-   d) Rs.13300/-

16. The average age of a class is 15.8 years. The average age of the boys in the class is 16.4 years while that of the girls is 15.4 years. What is the ratio of boys to girls in the class?
   a) 1 : 2   b) 3 : 4   c) 3 : 5   d) None of these

17. The sum of three numbers is 264. If the first number be twice the second and third number be one third of the first, then the second number is:
   a) 48   b) 54   c) 72   d) 84

18. The ratio of the ages of Meena and Meera is 4 : 3. The sum of their ages is 28 years. The ratio of their ages after 8 years will be:
   a) 4 : 3   b) 12 : 11   c) 7 : 4   d) 6 : 5

19. Pushpa is twice as old as Rita was 2 years ago. If the difference of their ages be 2 years, how old is Pushpa today?
   a) 6 years   b) 8 years   c) 10 years   d) 12 years

20. If \( x = y^a, y = z^b \) and \( z = x^c \), then the value of abc is:
   a) 4   b) 3   c) 2   d) 1
21. A & B can do a piece of work in 72 days; B and C can do it in 120 days; A and C can do it in 90 days. In what time can A do it?

a) 150 days b) 120 days c) 100 days d) 80 days

22. A number, on subtracting 15 from it, reduces to its 80%. What is 40% of that number?

a) 60 b) 45 c) 30 d) 90

23. Raman’s salary was decreased by 50% and subsequently increased by 50%. He has a loss of-

a) 0% b) 25% c) 0.25% d) 2.5%

24. Out of a tank which is ¾ th full, 21 litres of water is drawn out. The tank is now 2/5 th full. What is the capacity of the tank in litres?

a) 200 b) 120 c) 40 d) 60

25. A fruit seller purchases oranges at the rate of 3 for Rs.5 and sells them at 2 for Rs.4. His profit in the transaction is:

a) 10% b) 15% c) 20% d) 25%
SECTION-II : GAT

Directions- From the following sentences; choose one underlined word or phrase, which would not be appropriate in written English.

1. It was nothing else than his high-handedness that ruined him.
   a) It
   b) was
   c) else
   d) than

2. Either the captain himself or some of his crew is responsible for this piece of mismanagement.
   a) Either
   b) the
   c) himself
   d) or

3. The extra benefits in addition to its flexibility of operation and superior finish makes it the most desirable machine of its kind.
   a) The
   b) in
   c) its
   d) makes

4. I would gladly grant this request, if it was possible for me to do so, but we have a policy of keeping such information confidential.
   a) I
   b) would
   c) grant
   d) possible

5. The main fault with the old guard is that they are always determined to resist against any new idea.
   a) The
   b) with
   c) they
   d) against

Directions - Choose the pair of words which have a relationship between themselves similar to the relationship between the given pair of words.

6. hiatus : activity
   a) link : chain
   b) day : eternity
   c) mesh : net
   d) intermission : play

7. opalescent : iridescence
   a) garish : drabs
   b) effervescent : stagnation
   c) flushed : ruddiness
   d) magnetic : repulsion

8. abode : vagrant
   a) ship : pirate
   b) fort : sentry
   c) faith : prophet
   d) community : outcast

9. muse : inspiration
   a) editor : personality
   b) model : criticism
   c) epic : superstition
   d) patron : support

10. impeccable : fault
    a) immortal : life
    b) Impoverished : wealth
    c) insolvent : debt
    d) imperceptible : vision
Directions : Choose the alternative which is closest in meaning to the given word.

11. vicissitude
   a) danger  
   b) change of fortune  
   c) complexity  
   d) doubtful

12. execrable
   a) hard  
   b) detestable  
   c) painful  
   d) fine

13. precocious
   a) unusually mature  
   b) highly prized  
   c) perceptive  
   d) scholarly

14. harangue
   a) tirade  
   b) poem  
   c) vessel  
   d) cactus

15. irascible
   a) hot tempered  
   b) nervous  
   c) intense  
   d) sullen

Directions : Choose the alternative which most nearly means opposite of the given word

16. proclivity
   a) efficiency  
   b) reduction  
   c) authenticity  
   d) disinclination

17. stymie
   a) exhibit  
   b) assist  
   c) evade  
   d) brighten

18. abstemious
   a) silent  
   b) intelligent  
   c) disturbed  
   d) gluttonous

19. adroit
   a) impure  
   b) harmless  
   c) secretive  
   d) inept

20. pulchritude
   a) dispassion  
   b) innocence  
   c) unkindness  
   d) ugliness

Directions : Read the passage carefully and then answer the questions based on what is stated in the passage.

A bitter and indecisive war was waged between the Italian city-states of Pisa and Florence in 1503. The Florentine army was at the gates of Pisa, and the prospect of a bloody and prolonged siege was in the offing. At this point, the Signoria of Florence enlisted the aid of a world famous painter. The painter was Leonardo da Vinci, a gentle humanitarian, who had voluntarily stopped eating meat many years previous because of his great love for animals.
Leonardo’s fertile mind conceived a daring and unusual plan which could permanently reduce the power of Pisa. The idea was so simple, yet so effective, that it would cause Pisa to lose both its water supply and its seaport. His plan was to divert the Arno River from its course into a pair of canals that would empty into the sea at Leghorn, which was south of Pisa. He then proceeded to design a dam on the Arno and a series of efficient and novel machines for digging the canals.

This was the same Leonardo da Vinci who had painted the Mona Lisa and the Last Supper and who almost single-handedly, had discovered most of the laws of aerodynamics more than four hundred years before the first successful flight in a heavier-than-air machine. He has been called by some the world’s greatest all-round genius. His recently-discovered science notebooks describe and picture a bat-like ornithopter and an earlier design of a glider-like device. Because of the secrecy surrounding Leonardo’s experiments, no one knows for sure whether he ever flew either of these devices successfully. However, many of today’s scientists are willing to concede that Leonardo could have achieved the first airplane flight if a gasoline engine had already been invented.

Leonardo was born in a small town in Italy called Anchiano on April 15, 1452, to a peasant girl named Caterina. When he was five years old, his father, Piero da Vinci, took Leonardo back to the family house in the nearby town of Vinci, from which they both acquired their second name. Leonardo was welcomed warmly by his stepmother, who had no children of her own. Thus early years were comfortable ones, during which he first began to display some of his unique talent as both an artist and a scientist. By the age of fifteen he was an avid collector of insects specimens. He would invariably bring his “catch” home, where he would painstakingly study and draw sketches of each specimen.

21. Which of the following would be a suitable title to the passage?
   a) A tale of two cities       b) The greatest painter in the world
   c) Portrait of a genius      d) The man who invented the first aeroplane.

22. How did Leonardo da Vinci get his surname?
   a) His father gave it to him.       b) From the name of their family town
   c) Because he was originally known as Leonardo the invincible.
   d) From the name of the town of his birth.

23. The word ‘concede’ in the context of the passage means-
   a) acknowledge       b) confess       c) condemn       d) announce

24. It can be inferred from the passage that……
   a) da Vinci was an excellent painter
   b) da Vinci was a secretive man as regards his experiments
   c) Both a) & b)
   d) Neither a) nor b)

25. All the laws of thermodynamics were discovered by…
   a) Leonardo da Vinci       b) Modern Scientists
   c) Various people           d) Not enough information in passage to answer this question