



Final Examination: Major Test

Mandatory To attempt all Question

Objective Questions:

1*60=60

Section 1: Reasoning (20 Questions) :

- 1. Which of the following diagrams correctly represents the relationship between Humans, Engineers, and Women?**
 - A) A Venn Diagram with three intersecting sets
 - B) A linear diagram
 - C) A flow chart
 - D) A bar graph

- 2. Which number should replace the question mark in this series? 2, 6, 12, 20, ?**
 - A) 30
 - B) 32
 - C) 28
 - D) 26

- 3. If A is the brother of B, B is the sister of C, and C is the son of D, how is A related to D?**
 - A) Son
 - B) Daughter
 - C) Brother

D) Uncle

4. Statements: Some tables are chairs. All chairs are furniture. Conclusion:

1) Some tables are furniture. 2) Some chairs are tables.

A) Only 1 follows

B) Only 2 follows

C) Both follow

D) Neither follows

5. Pointing to a photograph, a woman says, "This man's son is my son's uncle." How is the woman related to the man in the photograph?

A) Sister

B) Wife

C) Daughter

D) Mother

6. Which of the following cube positions can result from a fold of the cube below?

A) Cube with faces 1, 2, 3

B) Cube with faces 4, 5, 6

C) Cube with faces 1, 5, 6

D) Cube with faces 2, 3, 4

7. A clock shows 3:30. What is the angle between the hour and the minute hands?

A) 90°

B) 75°

C) 105°

D) 45°

8. In a certain code language, 'OATH' is written as '5321' and 'FIND' as '7864'. How would you write 'HAND'?

- A) 5314
- B) 7314
- C) 7214
- D) 5317

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

- A) 16
- B) 24
- C) 18
- D) 20

10. Which of the following is the next figure in the pattern?

- A) Square
- B) Triangle
- C) Circle
- D) Hexagon

11. A is older than B, C is older than A, D is younger than B. If C is younger than E, who is the youngest?

- A) A
- B) B
- C) D
- D) E

12. Select the odd one out:

- A) Mango
- B) Banana
- C) Apple

D) Potato

13. A man walks 5 km towards north, then he turns right and walks 3 km. After that, he turns left and walks 2 km. In which direction is he now from the starting point?

- A) North-East
- B) North-West
- C) South-East
- D) South-West

14. Which word will come last if the following words are arranged in alphabetical order: Doctor, Director, Dog, Dream?

- A) Doctor
- B) Director
- C) Dog
- D) Dream

15. Complete the series: 3, 9, 27, ?, 243

- A) 54
- B) 72
- C) 81
- D) 108

16. Two trains are running in opposite directions at the speed of 60 km/h and 40 km/h. If their lengths are 110 meters and 90 meters, how much time will they take to cross each other?

- A) 10 seconds
- B) 15 seconds
- C) 20 seconds
- D) 5 seconds

17. If $8x = 64$, what is the value of x ?

- A) 6
- B) 7
- C) 8
- D) 4

18. In a certain language, if "LEMON" is coded as 512154, how is "APPLE" coded?

- A) 11351
- B) 13115
- C) 15113
- D) 11315

19. Identify the missing number: 5, 11, 24, 50, ?

- A) 82
- B) 92
- C) 85
- D) 87

20. What is the next term in the series: AZ, BY, CX, DW, ?

- A) EV
- B) EX
- C) ET
- D) EZ

Section 2: Aptitude (20 Questions)

1. A sum of money is compounded annually at 10%. If it amounts to ₹2310 in two years, what was the initial sum?

A) ₹2000
B) ₹1900
C) ₹2100
D) ₹2200
2. A person walking at 5 km/h reaches a destination in 2 hours. How long will it take the same person to reach the same destination walking at 10 km/h?

A) 1 hour
B) 1.5 hours
C) 2 hours
D) 0.5 hours
3. What is the probability of drawing a heart from a well-shuffled deck of cards?

A) $\frac{1}{4}$
B) $\frac{1}{3}$
C) $\frac{1}{2}$
D) $\frac{1}{13}$

4. If the radius of a circle is increased by 50%, by how much will the area increase?
- A) 100%
 - B) 125%
 - C) 150%
 - D) 200%
5. A shopkeeper sells 3 different types of products, priced at ₹150, ₹250, and ₹350. If the total sale for the day was ₹10,000, what is the maximum number of items he could have sold?
- A) 100
 - B) 40
 - C) 30
 - D) 25
6. A train 300 meters long is running at a speed of 90 km/h. In how much time will it cross a bridge of 200 meters?
- A) 15 seconds
 - B) 20 seconds
 - C) 25 seconds
 - D) 30 seconds
7. A man spends 30% of his income on rent, 20% on groceries, and saves the rest. If his monthly income is ₹50,000, how much does he save?
- A) ₹30,000
 - B) ₹25,000
 - C) ₹35,000
 - D) ₹40,000
8. Simplify the following: $(12 + 3 \times 5) \div (9 - 3)$.
- A) 5

- B) 6
- C) 7
- D) 8

9. A 20-liter mixture contains 20% alcohol. How much pure alcohol should be added to make the alcohol content 40%?

- A) 10 liters
- B) 5 liters
- C) 8 liters
- D) 4 liters

10. Two pipes can fill a tank in 15 hours and 20 hours, respectively. If both are opened together, how long will it take to fill the tank?

- A) 12 hours
- B) 10 hours
- C) 8 hours
- D) 9 hours

11. The average age of 10 students is 20 years. If the age of the teacher is included, the average increases by 1 year. What is the teacher's age?

- A) 25 years
- B) 30 years
- C) 29 years
- D) 31 years

12. What is the area of a rectangle whose length is 15 meters and width is 10 meters?

- A) 150 square meters

- B) 200 square meters
- C) 250 square meters
- D) 100 square meters

13. The difference between the squares of two consecutive odd numbers is always divisible by which of the following?

- A) 3
- B) 2
- C) 8
- D) 4

14. What is the ratio of the speeds of two cars if they travel 120 km and 160 km in the same time?

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

15. A person buys a watch for ₹720 and sells it at a loss of 10%. For how much does he sell the watch?

- A) ₹648
- B) ₹700
- C) ₹650
- D) ₹600

16. The sum of three consecutive numbers is 33. What is the largest number?

- A) 11
- B) 12
- C) 13
- D) 14

17. If 12 men can do a piece of work in 15 days, how many days will 10 men take to complete the same work?

- A) 18 days
- B) 20 days
- C) 16 days
- D) 22 days

18. Find the compound interest on ₹2000 at 10% per annum for 2 years.

- A) ₹420
- B) ₹400
- C) ₹440
- D) ₹500

19. The perimeter of a square is 64 meters. What is the length of each side?

- A) 16 meters
- B) 20 meters
- C) 18 meters
- D) 15 meters

20. If 40% of a number is 120, what is the number?

- A) 250
- B) 300
- C) 200
- D) 150

Section 3: Advanced Java (20 Questions)

1. Which method is used to terminate a thread in Java?

- A) stop()
- B) terminate()
- C) end()
- D) exit()

2. What is the default value of a boolean variable in Java?

- A) true
- B) false
- C) null
- D) 0

3. Which keyword is used to handle exceptions in Java?

- A) catch
- B) throw

- C) try
- D) finally

4. What does JVM stand for?

- A) Java Virtual Machine
- B) Java Variable Machine
- C) Java Verified Machine
- D) None of the above

5. Which of the following is not a type of inheritance in Java?

- A) Single inheritance
- B) Multiple inheritance
- C) Multilevel inheritance
- D) Hierarchical inheritance

6. Which collection class allows you to access elements by their position index?

- A) Set
- B) Map
- C) List
- D) Queue

7. Which of the following is not a feature of Java?

- A) Object-Oriented
- B) Platform Independent
- C) Distributed
- D) Pointer-Based

8. Which is the parent class of all classes in Java?

- A) Object
- B) Class
- C) Parent

D) Super

9. Which of the following is true about a constructor?

- A) Constructors can be overridden
- B) Constructors can have a return type
- C) Constructors are used to initialize objects
- D) Constructors cannot accept parameters

10. Which access modifier makes a member accessible only within its own class?

- A) private
- B) protected
- C) public
- D) default

11. Which of the following is a marker interface?

- A) Serializable
- B) Cloneable
- C) Both A and B
- D) None of the above

12. In Java, which of these is used to create an immutable object?

- A) final
- B) static
- C) private
- D) public

13. What is the output of the following code?

```
public class sample{  
    Run | Debug  
    public static void main(String[] args) {  
        int a = 10;  
        int b = 20;  
        System.out.println(a++ + ++b);  
    }  
}
```

- A) 30
- B) 31
- C) 32
- D) 33

14. Which of these methods in Java is used to compare two strings for equality?

- A) ==
- B) equals()
- C) compareTo()
- D) hashCode()

15. What is the size of an int variable in Java?

- A) 4 bytes
- B) 2 bytes
- C) 8 bytes
- D) 16 bytes

16. Which of these is used to represent characters in Java?

- A) char
- B) byte
- C) short
- D) int

17. Which of the following is used to find the length of an array in Java?

- A) length()

- B) size()
- C) length
- D) sizeOf()

18. Which of the following is a checked exception in Java?

- A) IOException
- B) ArrayIndexOutOfBoundsException
- C) NullPointerException
- D) ArithmeticException

19. Which is used for thread synchronization in Java?

- A) synchronized
- B) volatile
- C) transient
- D) static

20. Which class is used for reading input from the user in Java?

- A) Scanner
- B) BufferedReader
- C) InputStream
- D) PrintWriter

"जो अपने सपनों का पीछा करते हैं, वही अपनी किस्मत खुद बनाते हैं।"

(Those who chase their dreams create their own destiny.)

Best Of Luck