

Reg. No

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Time: 2 Hours
Max. Marks: 100

Name of the student: *Div:*

Name of the school :

Instructions:

- All questions are compulsory.
- Each question carries 1 mark.
- Choose the most appropriate answer from the given options.
- Use the OMR sheet provided to mark your answers.

According to Ohm's law, if the voltage across a resistor is 20 V and the current flowing through it is 2 A, what is its resistance?

- | | |
|-----------------|----------------|
| A) 40 Ω | B) 10 Ω |
| C) 0.1 Ω | D) 22 Ω |

2. The chemical formula for rust, which is hydrated iron(III) oxide, is:

- | | |
|-----------------------------|--|
| A) FeO | B) $\text{Fe}_2\text{O}_3 \cdot n\text{H}_2\text{O}$ |
| C) $\text{Fe}(\text{OH})_2$ | D) FeSO_4 |

3. Which type of mirror is used by dentists to get a magnified view of teeth?

- | | |
|-------------------|-----------------------|
| A) Convex mirror | B) Plane mirror |
| C) Concave mirror | D) Cylindrical mirror |

4. The pH of human blood is approximately 7.4, which makes it:

- | | |
|--------------------|----------------------|
| A) Strongly acidic | B) Neutral |
| C) Weakly alkaline | D) Strongly alkaline |

5. Which cell organelle is known as the “suicidal bag” of the cell due to its digestive enzymes?

- | | |
|-----------------|-------------|
| A) Ribosome | B) Lysosome |
| C) Mitochondria | D) Nucleus |

6. The sum of the first 20 positive integers can be calculated using the formula $n(n+1)/2$. What is the sum?
- A) 190
B) 200
C) 210
D) 400
7. The phenomenon responsible for the twinkling of stars is:
- A) Atmospheric reflection
B) Atmospheric refraction
C) Dispersion of light
D) Total internal reflection
8. The atomic number of an element is 8. Its electronic configuration is:
- A) 2, 6
B) 2, 8
C) 2, 4, 2
D) 8
9. If an object of mass 10 kg is moving with a constant velocity of 5 m/s, its acceleration is:
- A) 50 m/s²
B) 2 m/s²
C) 0.5 m/s²
D) 0 m/s²
10. A train 150 m long crosses a 350 m long platform in 20 seconds. What is the speed of the train?
- A) 10 m/s
B) 17.5 m/s
C) 20 m/s
D) 25 m/s
11. The chemical name for baking soda is:
- A) Sodium Chloride
B) Sodium Carbonate
C) Sodium Bicarbonate
D) Calcium Carbonate
12. The power of a lens is measured in dioptres. A lens with a focal length of 50 cm (0.5 m) has a power of:
- A) +0.5 D
B) -0.5 D
C) +2 D
D) -2 D
13. What is the mode of the data set: 2, 4, 6, 4, 8, 4, 9, 6?
- A) 2
B) 4
C) 6
D) 8
14. Newton's first law of motion is also known as the law of:
- A) Action-Reaction
B) Momentum
C) Inertia
D) Force
15. An alloy is a:
- A) Heterogeneous mixture of metals
B) Homogeneous mixture of a metal with other metals or non-metals
C) Pure metallic element
D) Compound of a metal and a non-metal

16. What is the Highest Common Factor (HCF) of 48 and 72?

- A) 12
- B) 24
- C) 48
- D) 144

17. The SI unit of electric current is the:

- A) Volt
- B) Ohm
- C) Ampere
- D) Watt

18. In the human body, the process of digestion begins in the:

- A) Stomach
- B) Mouth
- C) Small Intestine
- D) Esophagus

19. Which of the following is a vector quantity, having both magnitude and direction?

- A) Speed
- B) Mass
- C) Distance
- D) Velocity

20. The valency of nitrogen in ammonia (NH_3) is:

- A) 1
- B) 2
- C) 3
- D) 5

21. What is the value of 25% of 240?

- A) 48
- B) 50
- C) 60
- D) 72

22. A gene is a segment of which molecule?

- A) RNA
- B) Protein
- C) DNA
- D) Lipid

23. The boiling point of water decreases at higher altitudes because:

- A) The temperature is lower
- B) The atmospheric pressure is lower
- C) The air is less humid
- D) Gravity is weaker

24. One light-year is a unit of:

- A) Time
- B) Speed
- C) Distance
- D) Intensity of light

25. The process by which plants release water vapor into the atmosphere is called:

- A) Photosynthesis
- B) Respiration
- C) Transpiration
- D) Germination

26. Which gas is released when a metal reacts with an acid?

- A) Oxygen
- B) Carbon Dioxide
- C) Hydrogen
- D) Nitrogen

27. The square root of 324 is:

- A) 16
- B) 17
- C) 18
- D) 19

28. The part of the flower that develops into a fruit is the:

- A) Petal
- B) Sepal
- C) Ovary
- D) Stamen

29. The heating effect of electric current is described by:

- A) Ohm's Law
- B) Faraday's Law
- C) Joule's Law
- D) Ampere's Law

30. Which of the following is a double displacement reaction?

- A) $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$
- B) $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$
- C) $\text{AgNO}_3 + \text{NaCl} \rightarrow \text{AgCl} + \text{NaNO}_3$
- D) $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$

31. If the probability of an event is $P(E) = 0.05$, what is the probability of 'not E'?

- A) 0.05
- B) 0.95
- C) 1
- D) 0

32. The main function of the ozone layer in the upper atmosphere is to:

- A) Trap heat
- B) Absorb harmful ultraviolet (UV) radiation
- C) Increase the amount of oxygen
- D) Cause acid rain

33. A concave lens always forms an image that is:

- A) Real, inverted, and magnified
- B) Virtual, erect, and magnified
- C) Virtual, erect, and diminished
- D) Real, erect, and diminished

34. The roots of the quadratic equation $x^2 - 5x + 6 = 0$ are:

- A) 2 and 3
- B) -2 and -3
- C) 6 and -1
- D) -6 and 1

35. The process of splitting white light into its constituent colors is called:

- A) Reflection
- B) Refraction
- C) Dispersion
- D) Interference

36. Which of the following is not a fossil fuel?

- A) Coal
- B) Petroleum
- C) Natural Gas
- D) Uranium

37. The SI unit of pressure, the Pascal (Pa), is equivalent to:

- | | |
|---------------------------|--|
| A) Newton per meter (N/m) | B) Newton per square meter (N/m ²) |
| C) Joule per meter (J/m) | D) Watt per square meter (W/m ²) |

38. Mendel used which plant for his experiments on inheritance?

- | | |
|---------------|------------------|
| A) Rose plant | B) Mango tree |
| C) Pea plant | D) Mustard plant |

39. If 15 workers can build a wall in 10 days, how many days will 5 workers take to build the same wall?

- | | |
|--------------|------------|
| A) 3.33 days | B) 15 days |
| C) 30 days | D) 50 days |

40. An aqueous solution of copper sulphate (CuSO₄) is:

- | | |
|-----------|--------------|
| A) Green | B) Blue |
| C) Yellow | D) Colorless |

41. Choose the correct indirect speech: He said, "I must finish this report today."

- A) He said that he must finish that report that day.
- B) He said that he had to finish that report that day.
- C) He said that he would finish this report today.
- D) He said that he was to finish that report today.

42. Identify the error in the sentence:

"Neither the students nor the teacher were present in the hall."

- | | |
|------------|----------------|
| A) Neither | B) students |
| C) were | D) in the hall |

43. Choose the most appropriate synonym for "candid".

- | | |
|--------------|--------------|
| A) Deceitful | B) Frank |
| C) Biased | D) Secretive |

44. Which sentence contains a metaphor?

- A) The news was a dagger to his heart.
- B) The clouds drifted lazily like ships on the sea.
- C) The wind howled through the night.
- D) The sun is very hot today.

45. Choose the correct meaning of the idiom "to beat around the bush".

- A) To speak directly and frankly
- B) To investigate a matter thoroughly
- C) To avoid talking about the main topic
- D) To work hard on a pointless task

46. "A statement that appears self-contradictory but contains a latent truth" is a:
- A) Simile
 - B) Metaphor
 - C) Paradox
 - D) Fallacy
47. Identify the figure of speech in: "The waves danced along the shore."
- A) Alliteration
 - B) Simile
 - C) Metaphor
 - D) Personification
48. The word "bibliophile" refers to a person who:
- A) Loves to travel
 - B) Is an expert in biology
 - C) Collects or has a great love for books
 - D) Writes for a living
49. Choose the correct preposition: He was accused _____ the theft.
- A) for
 - B) with
 - C) of
 - D) on
50. The sentence "The portrait was painted by the artist" is in:
- A) Active Voice
 - B) Passive Voice
 - C) Active-Passive Voice
 - D) Neither
51. What does the prefix "sub-" in words like "submarine" or "submerge" mean?
- A) Above
 - B) Across
 - C) With
 - D) Under
52. Complete the sentence using the correct conditional form: "If I _____ harder, I would have passed the exam."
- A) study
 - B) studied
 - C) had studied
 - D) would study
53. A person who is overly concerned with minor details and rules is best described as:
- A) Meticulous
 - B) Pedantic
 - C) Ambitious
 - D) Stoic
54. The literary device of giving a hint or clue of what is to come later in a story is called:
- A) Flashback
 - B) Foreshadowing
 - C) Irony
 - D) Symbolism
55. Identify the odd one out based on the abstract quality they represent.
- A) Courage
 - B) Honesty
 - C) Integrity
 - D) Anger

56. Choose the correct antonym for “expand”.

- | | |
|-------------|------------|
| A) Enlarge | B) Widen |
| C) Contract | D) Stretch |

57. The sentence “He is the Einstein of our class” is an example of:

- | | |
|-------------|--------------------|
| A) Simile | B) Irony |
| C) Allusion | D) Personification |

58. Choose the correctly punctuated sentence:

- A) The guide asked, “Whose bag is this?”
- B) The guide asked, “Who’s bag is this”?
- C) The guide asked, “Whose bag is this.”
- D) The guide asked “Whose bag is this?”.

59. Read the statement and conclusion: Statement: All successful people are hardworking. Conclusion: All hardworking people are successful. The conclusion is:

- | | |
|--------------------|----------------------|
| A) Definitely true | B) Definitely false |
| C) Probably true | D) Logically invalid |

60. Select the correctly spelled word.

- | | |
|--------------|--------------|
| A) Committed | B) Committed |
| C) Comitted | D) Comittted |

61. ‘Emotional Intelligence’ (EI) is crucial in the workplace because it helps in:

- A) Performing complex calculations quickly.
- B) Understanding and managing one’s own and others’ emotions for better collaboration.
- C) Writing code without any errors.
- D) Ignoring feedback from colleagues.

62. The practice of prioritizing tasks based on urgency and importance is a key aspect of:

- | | |
|--------------------|--------------------|
| A) Multitasking | B) Procrastination |
| C) Time Management | D) Delegation |

63. An ‘entrepreneur’ is best defined as someone who:

- A) Inherits a large family business.
- B) Works a stable 9-to-5 job.
- C) Identifies a need and takes the initiative and risk to create a new business.
- D) Prefers to work under strict supervision.

64. A key element of ‘digital literacy’ in the modern age is:

- A) Knowing how to forward viral messages.
- B) The ability to critically evaluate online information for credibility.
- C) Having accounts on every social media platform.
- D) Being able to type at a very high speed.

65. Career counselling is beneficial for students as it helps them:

- A) Choose the easiest subjects in school.
- B) Get a job without any interviews.
- C) Align their interests, skills, and values with potential career paths.
- D) Follow the same career path as their friends.

66. ‘Leadership’ is considered a ‘soft skill’ because it involves:

- A) Technical knowledge of a specific machine.
- B) The ability to inspire, motivate, and guide a team towards a common goal.
- C) A formal certificate of authority.
- D) The ability to perform tasks faster than anyone else.

67. The ability to bounce back from setbacks and adapt to adversity is known as:

- A) Stubbornness
- B) Resilience
- C) Apathy
- D) Aggression

68. ‘Active listening’ in a team discussion involves:

- A) Waiting for your turn to speak.
- B) Formulating your counter-argument while the other person is speaking.
- C) Paying full attention and seeking to understand the speaker’s perspective.
- D) Interrupting to correct the speaker’s mistakes.

69. A person with a strong aptitude for logical reasoning and problem-solving might be well-suited for a career in:

- A) Performing Arts
- B) Engineering or Computer Science
- C) Professional Sports
- D) Culinary Arts

70. The concept of ‘lifelong learning’ is crucial today because:

- A) It is a government mandate.
- B) It allows individuals to remain adaptable and relevant in a rapidly changing world.
- C) It guarantees a promotion every year.
- D) It is only necessary for those in academic fields.

71. A 'career cluster' is a:

- A) Group of people with the same job.
- B) Specific company to work for.
- C) Grouping of occupations and industries based on common knowledge and skills.
- D) Mandatory list of jobs to choose from.

72. One of the most important 'financial literacy' skills for a young adult is:

- A) Knowing how to apply for a credit card.
- B) Understanding the basics of budgeting, saving, and investing.
- C) Being able to name all the banks in the country.
- D) Knowing how to borrow money from friends.

73. The ability to adjust to new situations, tools, and work environments is called:

- A) Consistency
- B) Adaptability
- C) Rigidity
- D) Conformity

74. A key responsibility of a good team leader is to:

- A) Do all the important work themselves.
- B) Foster an environment of collaboration and open communication.
- C) Make all decisions without consulting the team.
- D) Assign blame when a mistake occurs.

75. Setting realistic, specific, and time-bound goals is an example of:

- A) Daydreaming
- B) Self-regulation
- C) Procrastination
- D) Wishful thinking

76. Complete the series: 2, 6, 12, 20, 30, ?

- A) 36
- B) 40
- C) 42
- D) 48

77. Find the odd one out from the group:

- A) Circle
- B) Square
- C) Rectangle
- D) Rhombus

78. Complete the analogy: Earth is to Planet as Sun is to:

- A) Moon
- B) Star
- C) Galaxy
- D) Solar System

79. If in a certain code, 'CAT' is written as 3120 (C=3, A=1, T=20), then how will 'DOG' be written?

- A) 4157
- B) 4158
- C) 4156
- D) 3160

80. Identify the next letter in the series: A, D, I, P, ? (Hint: The positions are 1^2 , 2^2 , 3^2 , 4^2 ...)

- | | |
|------|------|
| A) S | B) U |
| C) W | D) Y |

81. Find the missing term in the geometric progression: 5, 10, 20, 40, ?

- | | |
|--------|--------|
| A) 60 | B) 80 |
| C) 100 | D) 120 |

82. Analogy: Page is to Book as Leaf is to:

- | | |
|-----------|---------|
| A) Root | B) Tree |
| C) Flower | D) Stem |

83. If in a code language 'CLOCK' is written as 'DMPDL', how will 'WATCH' be written in that code?

- | | |
|----------|----------|
| A) XBUGI | B) XBVGI |
| C) YBVGI | D) XAUFI |

84. Find the next number in the series: 4, 9, 19, 39, 79, ?

- | | |
|--------|--------|
| A) 119 | B) 139 |
| C) 159 | D) 169 |

85. Which of the following is the odd one out?

- | | |
|-----------|------------|
| A) Copper | B) Iron |
| C) Silver | D) Plastic |

86. A is the father of B and C is the mother of A. How is C related to B?

- | | |
|-----------|----------------|
| A) Mother | B) Grandmother |
| C) Aunt | D) Sister |

87. If each vowel in the word 'EQUATION' is replaced by the next letter in the English alphabet, and each consonant is replaced by the previous letter, the new word will be:

- | | |
|-------------|-------------|
| A) FPVBSJPM | B) DPVRBHSN |
| C) FRVBSJPO | D) DPVRBJPO |

88. Analogy: Poet is to Poem as Sculptor is to:

- | | |
|-----------|------------|
| A) Chisel | B) Stone |
| C) Statue | D) Gallery |

89. A man walks 5 km East, then turns right and walks 5 km South. How far is he from his starting point?

- | | |
|-------------------|--------------------|
| A) 5 km | B) $10\sqrt{2}$ km |
| C) $5\sqrt{2}$ km | D) $2\sqrt{5}$ km |

90. Which figure logically follows the sequence? (A sequence showing a line rotating 45 degrees clockwise at each step)

- A) A vertical line
B) A horizontal line
C) A line pointing North-West
D) A line pointing South-West

91. The G20 Summit in 2025 is scheduled to be hosted by which country, taking over the presidency from Brazil?

- A) India
B) Indonesia
C) China
D) South Africa

92. India's "Green Hydrogen Mission," a major topic in the Avenir magazines, primarily aims to:

- A) Increase the country's dependence on coal.
- B) Reduce fossil fuel imports and promote clean energy.
- C) Boost the export of natural gas.
- D) Stop all forms of energy production.

93. The “One Health” concept, gaining global prominence and featured in recent reports, advocates for an integrated approach that recognizes the interconnection between:

- A) The health of the economy, government, and public.
- B) Mental, physical, and spiritual health only.
- C) The health of people, animals, and their shared environment.
- D) Public healthcare and private healthcare.

94. Your friend asks to copy your assignment because they did not have time to complete it. The most ethical and helpful decision is to:

- A) Give them your assignment to copy directly.
- B) Refuse and report them to the teacher for not doing their work.
- C) Politely decline to share your work, but offer to help them understand the concepts so they can do it themselves.
- D) Ignore their request completely.

95. As per the Indian Constitution, the Chairperson of the NITI Aayog is always the:

- A) President of India
B) Finance Minister
C) Governor of the RBI
D) Prime Minister of India

96. A new government policy offers a subsidy for installing solar panels. When deciding whether to install one at home, this policy should be considered as:

- A) The sole reason to make the purchase, regardless of need.
- B) An irrelevant piece of information.
- C) A financial incentive that should be evaluated along with the initial cost, long-term savings, and your family's needs.
- D) A complication that makes the decision harder.

- 97. Consider the arguments regarding the use of AI in classrooms: I: Yes, AI tools can personalize learning and increase efficiency. II: No, over-reliance on AI can hinder the development of critical thinking skills.**
- A) Only argument I is strong.
 - B) Only argument II is strong.
 - C) Both arguments I and II are strong and represent a key debate on the topic.
 - D) Neither I nor II is strong.
- 98. The 2024 Nobel Peace Prize was awarded to recognize significant work in the field of:**
- A) Artificial Intelligence safety protocols
 - B) Global efforts against nuclear proliferation
 - C) Climate activism and environmental protection
 - D) Literature promoting cross-cultural understanding
- 99. The “Digital India” mission, a flagship program of the Government of India, primarily aims to:**
- A) Increase the amount of paperwork in government offices.
 - B) Transform India into a digitally empowered society and knowledge economy.
 - C) Limit citizens’ access to the internet.
 - D) Promote the use of cash for all transactions.
- 100. During a group project, two members have a strong disagreement, halting progress. As the team leader, your immediate best course of action is to:**
- A) Ignore the conflict and hope it resolves itself.
 - B) Take a side with the person you agree with more.
 - C) Make an authoritative decision and force them to comply.
 - D) Mediate a discussion, allowing both sides to be heard to find a common ground.