TEST # VII - 01, May 2023

NAME: _____   Total. Time: 1:30 Hr   M.M: 150

INSTRUCTIONS

1. The paper consists of two sections A & B. Section A – Mathematics & Section B - Science.

2. The objective paper is designed by considering School Exam, NTSE & IIT Foundation.

3. The marking system is given just before the start of the Part in each section.

4. Blank papers, clipboards, log tables, slide rules, calculators, cameras, cellular phones, pagers and electronic gadgets are NOT allowed during exam.

5. The maximum mark allotted to the paper is 150.

6. Total time allotted for the exam is 1:30 Hours.

7. SECTION – A (MATHEMATICS) Questions No's: 1 – 15.

   SECTION – B (SCIENCE) Questions No's 16 – 45.

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Test is just a crosscheck of our learning during the month! So, be honest with thyself!

SECTION – A (MATHEMATICS)

PART - I

SINGLE OPTION CORRECT (+ 4, – 1, 0). Only one option is correct.

1. Select the incorrect statement

   (A) $a \times 0 = 0$ (B) $-12 \div -2 = 6$

   (C) $a \div 0 =$ Not Define (ND)   (D) $(-3) \times 5 \times (-2) = -30$

2. Which of the following is the greatest integer less than - 4.2?

   (A) - 4   (B) - 5   (C) - 6   (D) – 7

3. The sum of two consecutive odd integers is 44. What is the smaller integer?

   (A) 19   (B) 20   (C) 21   (D) 22

4. The value of $\left\{ 24 \div 2 \div 6 - \overline{25-20} \times 2 + \left(\dfrac{4}{5} \text{ of } \overline{20-15} \right) \right\} + 24 - 20$ is

   (A) 5   (B) 0   (C) 4   (D) None of These

5. What is the product of the smallest positive even integer and the largest negative odd integer?

   (A) - 2   (B) - 4   (C) 2   (D) 4

6. Ascending order of $\dfrac{12}{11}, \dfrac{11}{12}, \dfrac{5}{6}, \dfrac{6}{5}$ is

   (A) $\dfrac{5}{6} < \dfrac{6}{5} < \dfrac{11}{12} < \dfrac{12}{11}$ (B) $\dfrac{6}{5} < \dfrac{5}{6} < \dfrac{12}{11} < \dfrac{11}{12}$ (C) $\dfrac{5}{6} < \dfrac{11}{12} < \dfrac{12}{11} < \dfrac{6}{5}$ (D) $\dfrac{11}{12} < \dfrac{5}{6} < \dfrac{6}{5} < \dfrac{12}{11}$

ROUGH SPACE

←⊢~■ : ☺ ☺ Best of Luck! ☺ ☺ : ■~⊢→

7. If a is an integer, which of the following is an even integer?

   (A) a + 3   (B) 2a   (C) 2a - 1   (D) a ÷ 2

8. What is the value of |6 - 12|? Where |.| represent absolute value

   (A) - 6   (B) 0   (C) 6   (D) 12

9. Suman studies for $7\frac{1}{3}$ hours daily. She devotes $3\frac{4}{5}$ hours of her time for Science and Mathematics. How much time does she devote for other subjects?

   (A) $2\frac{13}{15}$ h   (B) $11\frac{2}{15}$ h   (C) $4\frac{7}{15}$ h   (D) $3\frac{8}{15}$ h

10. The next number of the pattern 60, 30, 15, _____ is

    (A) 10   (B) 5   (C) $\frac{15}{4}$ (D) $\frac{15}{2}$
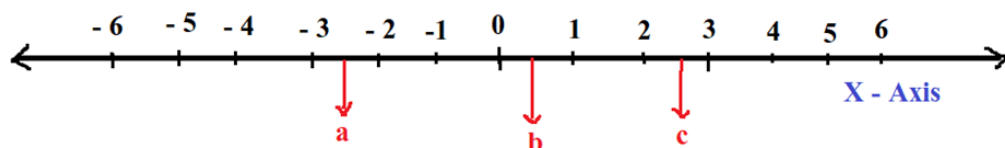

PART – II

MULTI OPTION CORRECT (+ 4, –1, 0). One or More options are correct.

11. Select the correct value(s) of $\dfrac{1}{4\frac{2}{7}} + \dfrac{1}{3\frac{11}{13}} + \dfrac{1}{\left(\frac{5}{9}\right)}$

    (A) $\dfrac{172}{75}$ (B) $\dfrac{344}{150}$ (C) $2\dfrac{12}{75}$ (D) $2\dfrac{22}{75}$

ROUGH SPACE

↤~■: ☺ ☺ Best of Luck! ☺ ☺ :■~↦

12. Consider the Number Line to select the correct answers.

(A) - 6 < a < 0 < c

(B) 0 < b < |a| < c

(C) - 3 < 1 < |a|

(D) a×b < c

13. Select the correct statement about fractions. (n, m are Integers, m ≠ 0)

(A) $\dfrac{43}{8} = 5\dfrac{3}{8}$

(B) $5\dfrac{2}{3} - 7\dfrac{1}{3} + 4\dfrac{2}{3} = 3$

(C) $\dfrac{2 \div 3}{5 \div 4} = \dfrac{2 \times 4}{3 \times 5} = \dfrac{8}{15}$

(D) $\dfrac{n}{m}$ is a proper fraction if n > m

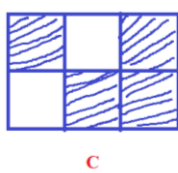14. Consider the Division as shown in the figure

(A) A = 5, B = 6, C = 8.

(B) A = 7, B = 6, C = 8.

(C) A×B – C = 22

(D) A×(C - B) = 14

15. Consider the Figure as shown and the shading representing fractions A, B, C & D respectively.

(A) A = 1/4   (B) B = 1/4   (C) C = 2/3   (D) 2D < B + C

ROUGH SPACE

⟻~■: ☺ ☺ Best of Luck! ☺ ☺ :■~⟼

SECTION – B (SCIENCE)

PART – I (PHYSICS)

SINGLE OPTION CORRECT (+ 3, – 1, 0)

16. No medium is required in:

    (A) Conduction

    (B) Convection

    (C) Radiation

    (D) Both A & B options

17. Range of Laboratory thermometer is – a ºC to b ºC. Then select the correct option

    (A) a = 10, b = 100   (B) a = - 10, b = 110   (C) a = 10, b = 110   (D) a = 10, b = - 110

18. One litre of water at 30 ºC is mixed with one liter of water at 50 ºC. Temperature of the mixture will be

    (A) 80 ºC

    (B) More than 50 ºC but less than 80 ºC

    (C) 20 ºC

    (D) Between 30 ºC and 50 ºC

19. The relation between ºC and ºF conversion formula is

    (A) $^{\circ}F = \dfrac{9}{5} \times {}^{\circ}C + 32$ (B) $^{\circ}F = \dfrac{5}{9} \times {}^{\circ}C + 32$ (C) $^{\circ}F = \dfrac{5}{9} \times {}^{\circ}C - 32$ (D) $^{\circ}F = \dfrac{9}{5} \times {}^{\circ}C - 32$

20. The value of temperature 40ºC in ºF is

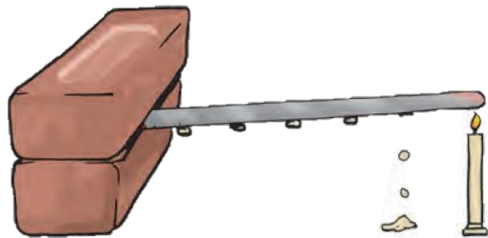   (A) 100 ºF   (B) 104 ºF   (C) 54.2 ºF   (D) None of these

ROUGH SPACE

←⊣~∎: ☺ ☺ Best of Luck! ☺ ☺ :∎~⊢→

21. Why we use plastic or Wood handle instead of Iron in frying pan?

(A) Wood is a good conductor of heat   (B) Wood is a bad conductor of heat

(C) Wood is cheap as compare to Iron   (D) Wood is lighter than Iron

22. Consider the figure as shown: The flow of heat transfer taking place due to

(A) Conduction   (B) Convection   (C) Radiation   (D) None of these

23. Select the correct statement

(A) Dark color cloths absorb less heat.

(B) White color cloth absorb less heat than dark to wear in summer.

(C) Wool is good conductor of heat to wear in winter.

(D) The heat at roof of house is an effect of convection.

24. The temperature of the sun is measured with

(A) Platinum thermometer   (B) Gas thermometer

(C) Pyrometer   (D) Vapour pressure thermometer

25. The Liquid we use in the thermometer is _____ & its poisonous in nature.

(A) Hg   (B) H_2O (C) Liquid Nitrogen   (D) NaOH

ROUGH SPACE

⟵⊣~■: ☺☺ Best of Luck! ☺☺ :■~⊢⟶

PART – II (CHEMISTRY)

SINGLE OPTION CORRECT (+ 3, – 1, 0)

26. Which of the following substances is commonly used to neutralize stomach acid?

    (A) Vinegar   (B) Lemon juice   (C) Baking soda   (D) Orange juice

27. When an acid reacts with a base, what is formed?

    (A) Salt and water   (B) Carbon dioxide gas   (C) Oxygen gas   (D) Hydrogen gas

28. Which of the following substances is an example of a base?

    (A) Lemon juice   (B) Vinegar   (C) Soap   (D) Carbonated water

29. Which of the following is a natural indicator of acidity?

    (A) Turmeric   (B) Litmus paper   (C) Phenolphthalein   (D) Cabbage juice

30. Which of the following is a characteristic of acids?

    (A) Bitter taste   (B) Turns red litmus paper blue

    (C) Feels slippery   (D) Sour taste

31. Which of the following substances is commonly used to test for the presence of acids?

    (A) Litmus paper   (B) Turmeric powder   (C) Phenolphthalein   (D) Cabbage juice

32. What does the pH scale range from?

    (A) 0 to 10   (B) 1 to 14   (C) -1 to 1   (D) 0 to 7

33. Which of the following substances is an example of a neutral substance?

    (A) Lemon juice   (B) Vinegar   (C) Pure water   (D) Tomato juice

34. What happens when an acid and a base react in equal amounts?

    (A) A violent reaction occurs   (B) No reaction takes place

    (C) A neutralization reaction occurs   (D) Both substances evaporate

35. Which of the following substances can be used to treat ant bites or bee stings due to its basic nature?

    (A) Vinegar   (B) Lemon juice   (C) Baking soda   (D) Orange juice

PART – III (BIOLOGY)

SINGLE OPTION CORRECT (+ 3, – 1, 0)

36. The plant that traps and feeds on insects is:

    (A) autotroph   (B) Partial Autotroph   (C) Heterotroph   (D) none of these

37. Cascuta is an example of:

    (A) parasite   (B) saprotroph   (C) Host   (D) Autotroph

38. The process of photosynthesis converts solar energy into:

    (A) kinetic energy   (B) Chemical energy   (C) potential energy   (D) nuclear energy

39. Which of the following is not required for photosynthesis by green leaves of a plant:

    (A) Carbon dioxide   (B) Oxygen   (C) Sunlight   (D) Water

40. The process of taking in food by an animal and its utilization in the body is called:

    (A) ingestion   (B) digestion   (C) nutrition   (D) egestion

41. The millions of finger like outgrowth in the inner wall of small intestine are called:

    (A) veins   (B) buds   (C) capillaries   (D) Villi

42. The length of the small intestine in adult human being is about:

    (A) 1.5 m   (B) 7.5 m   (C) 4.5 m   (D) 2.5 m

43. Which of the following is for biting and cutting food

    (A) molars   (B) premolars   (C) Canine   (D) incisors

44. Which of the following can digest cellulose carbohydrate present in its food:

    (A) cow   (B) Lion   (C) Human   (D) Cat

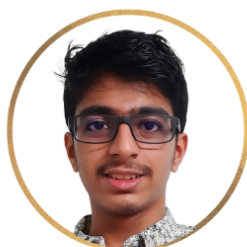45. Which of the following is incorrect statement in respect to amoeba:

    (A) It has no fixed shape   (B) It has no fixed mouth

    (C) it has false feet   (D) it has a digestive system

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