VISTO - 2016 - 17

(VELAMMAL INTER SCHOOL SCIENCE TALENT OLYMPIAD)
SEASON - I (MOCK TEST 1)
CLASS - VII

Duration : 2hrs   **Max.Marks : 100**

Instructions To the Candidate

1. a) Write your **NAME** and **CLASS** in the space provided on **OMR** Response sheet.

    b) You have to mark the answers on the **OMR** Response sheet only.

    c) You have to handle the **OMR** Response sheet with utmost care.

    d) Do not fold/mutilate or make any unnecessary markings on the **OMR** Response sheet.

    e) Use **BLUE** or **BLACK BALL POINT PEN** only to darken the appropriate circles in **OMR** Response sheet.

2. Answers marked with **PENCIL** will not be considered for evaluation.

3. This Question Paper consists of **100 QUESTIONS**, under four subjects heads, **MATHEMATICS (40 Questions), PHYSICS (20 Questions), CHEMISTRY (20 Questions) and BIOLOGY (20 Questions).**

4. Each question has four alternative responses marked a, b, c, d. You have to darken the appropriate circle provided in the OMR Response sheet against each question.

5. **1 MARK** will be awarded for every correct response for all the questions in **ALL THE FOUR SUBJECTS.**

6. **NO** mark will be deducted for incorrect response.

7. Usage of Calculators, Log tables and Electronic gadgets is strictly prohibited in the examination hall.

8. Return the OMR Response sheet to the Invigilator at the end of Examination, before leaving the examination hall.

MATHEMATICS

Single Response Type :

1. What is the absolute value of $|-2|$

    A) $\dfrac{-1}{2}$ B) $\dfrac{1}{2}$ C) -2   D) 2

2. $-45 \div 9 = ?$

    A) 5   B) -5   C) 9   D) -9

3. Simplify 36 - [18 - {14 - (15 - 4 $\div$ 2 × 2)}]

    A) 21   B) 20   C) 22   D) 24

4. Find the value of $(-20)\times(-1)+(-28)\div 7$

   A) 10   B) 12   C) 14   D) 16

5. What should be added to $5\frac{3}{7}$ to get 12?

   A) $\frac{46}{7}$ B) $\frac{7}{46}$ C) $\frac{44}{7}$ D) $\frac{7}{44}$

6. The cost of $5\frac{2}{5}$kg of sugar is Rs $101\frac{1}{4}$. Find its cost per kg?

   A) Rs $18\frac{1}{2}$ B) Rs $18\frac{1}{4}$ C) Rs $18\frac{3}{4}$ D) Rs 18

7. If milk is available at Rs $17\frac{3}{4}$ per litre. Find the cost of $7\frac{2}{5}$litres of milk?

   A) Rs $131\frac{1}{20}$ B) Rs $131\frac{7}{20}$ C) Rs $131\frac{8}{21}$ D) Rs $132\frac{8}{21}$

8. By what number should $5\frac{5}{6}$ be multiplied to get $3\frac{1}{3}$?

   A) $\frac{7}{5}$ B) $\frac{5}{7}$ C) $\frac{7}{4}$ D) $\frac{4}{7}$

9. The decimal form of $20+9+\frac{4}{100}$

   A) 20.94   B) 2.094   C) 209.4   D) 2.0094

10. Multiply 7.43 by 14.1

   A) 10.4763   B) 1047.63   C) 104.763   D) 108.763

11. One metre of cloth costs Rs 152.50. What is the cost of 10.75 metres of cloth?

   A) Rs 1639.375   B) Rs 16.3975   C) Rs 169.375   D) Rs 16937.35

12. How many buckets of equal capacity can be filled from 586.5 litres of water, if each bucket has capacity of 8.5 litres?

   A) 66   B) 67   C) 68   D) 69

13. If a = 2 and b = 3 then a^b+b^a

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

14. Simplify $\frac{2^8\times a^5}{4^3\times a^3}$ is

   A) $4a^2$ B) $6a^2$ C) $2a^2$ D) None

15. If $\left(\dfrac{p}{q}\right) = \left(\dfrac{2}{3}\right)^2 \div \left(\dfrac{6}{7}\right)^0$ then $\left(\dfrac{q}{p}\right)^3$ is

A) $\dfrac{27}{8}$　　　　　B) $\dfrac{8}{27}$　　　　　C) $\dfrac{64}{729}$　　　　　D) $\dfrac{729}{64}$

16. If $\dfrac{9^n \times 3^n \times 3^2 - (27)^n}{\left(3^3\right)^5 \times 2^3} = \dfrac{1}{27}$ find 'n'?

A) 4　　　　　B) 2　　　　　C) 6　　　　　D) 8

17. Two supplementary angles differ by 34°. Find the angles.

A) 73°, 107°　　　B) 74°, 108°　　　C) 75°, 105°　　　D) 76°, 104°

18. Which pair of following angles are complementary?

A) 48°, 52°　　　B) 70°, 20°　　　C) 45°, 55°　　　D) 75°, 25°

19. Two lines PQ and RS intersect at 'O' if $\angle POR = 50°$ then the value of $\angle ROQ$ is
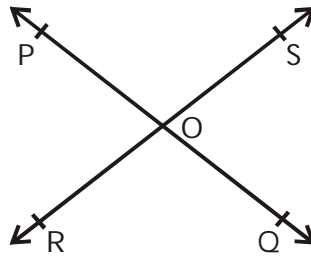
A) 50°　　　　　B) 60°　　　　　C) 130°　　　　　D) 180°

20. State the property that is sued below if $a \parallel b$ then $\angle 1 = \angle 5$
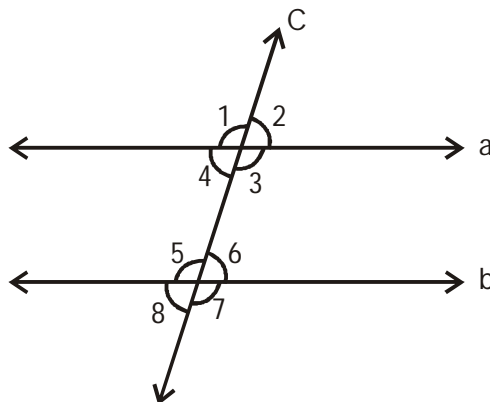
A) alternate angles　　　　　　　　B) corresponding angles

C) vertically angles　　　　　　　　D) pair of interior angles

21.   How many medians a triangle can have?

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

22.   Side opposite to the vertex Q of $\triangle PQR$

A) PQ   B) QR   C) RQ   D) PR

23.   Find the value of x in the adjoining figure
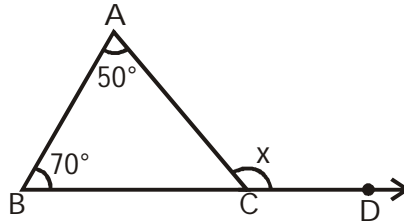
A) 60°   B) 120°   C) 70°   D) None

24.   Find the value of x
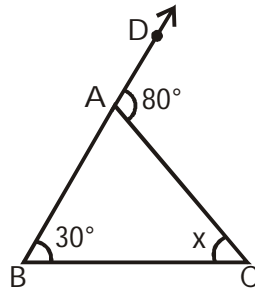
A) 50°   B) 110°   C) 100°   D) 90°

25.   Two angles are congruent if they have

A) equal measures   B) same name

C) unequal measures   D) none

26.   In $\triangle ABC$ and $\triangle PQR$ AB = 4 cm, BC = 5 cm, AC = 6 cm and PQ = 4 cm, QR = 5 cm, PR = 6 cm then which of the following is true?

A) $\triangle ABC \cong \triangle QRP$ B) $\triangle ABC \cong \triangle PQR$ C) $\triangle ABC \cong \triangle RPQ$ D) $\triangle ABC \cong \triangle PRQ$

27. In the given figure BC and AD are equal perpendicular to line segment AB. If $\triangle BOC \cong \triangle AOD$ then the relation between OC and OD is
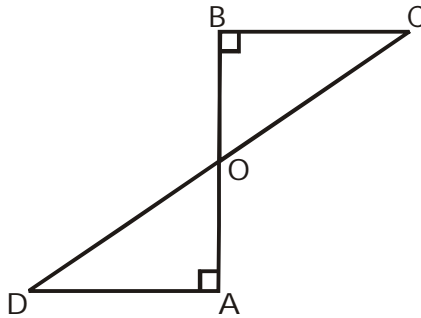
A) OD > OC   B) OD < OC   C) OD = OC   D) $OD = \frac{1}{2}OC$

28. Which of the following has both horizontal as well as vertical line of

A) H   B) V   C) S   D) A

29. A parallelogram has ____ lines of symmetry

A) 1   B) 0   C) 3   D) 2

30. Find the number of lines of symmetry of the given figure
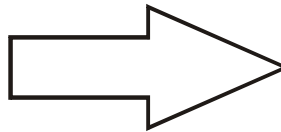
A) 2   B) 3   C) 1   D) None

Assertion and Reasoning Type:
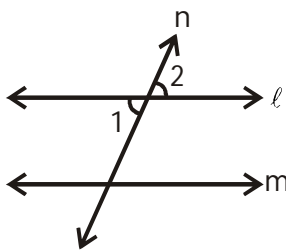
31.

Statement 1 : In the given figure 'ℓ' , m are parallel lines and n is a tranversal then $L_1 = L_2$

Statement 2 : In the given figure ℓ is parallel to m and vertically opposite angles are equal.

A) Both statements are true, statement 2 is the correct explanantion of statement 1

B) Both statements are true, statement 2 is not the correct explanantion of statement 1

C) Statement 1 is true statement 2 is false

D) Statement 1 is false statement 2 is true

32.   **Statement 1 :** $\left(\dfrac{-3}{4}\right)^7 \div \left(\dfrac{-3}{4}\right)^5 = \left(\dfrac{3}{4}\right)^2$

Statement 2 : $a^m \div a^n = a^{m-n}$

A) Both statements are true, statement 2 is the correct explanantion of statement 1

B) Both statements are true, statement 2 is not the correct explanantion of statement 1

C) Statement 1 is true statement 2 is false

D) Statement 1 is false statement 2 is true

Linked Comprehensive Type :

I $\text{Product of two fractions} = \dfrac{\text{Product of their numerators}}{\text{Product of their denominators}}$ i.e. $\dfrac{a}{b} \times \dfrac{c}{d} = \dfrac{ac}{bd}$

33.   Multiply $\dfrac{2}{9}$ by $\dfrac{4}{5}$

A) $\dfrac{2}{45}$ B) $\dfrac{8}{45}$ C) $\dfrac{4}{45}$ D) $\dfrac{45}{8}$

34.   Multiply $2\dfrac{1}{3}$ by $\dfrac{2}{5}$

A) $\dfrac{14}{15}$ B) $\dfrac{15}{4}$ C) $\dfrac{2}{15}$ D) $\dfrac{7}{15}$

35.   Multiply $\dfrac{4}{5}$ by $1\dfrac{5}{7}$

A) $1\dfrac{12}{35}$ B) $1\dfrac{11}{35}$ C) $1\dfrac{13}{35}$ D) $1\dfrac{10}{35}$

Linked Comprehensive Type :

II.   If $\ell \parallel m$ and P is transversal and 1 = 70° then find
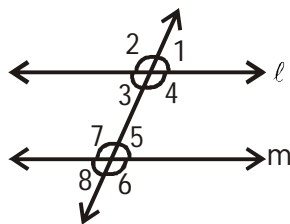
36.   The value of 3 is

A) 140°   B) 110°   C) 70°   D) 60°

37.   The value of 5 is

A) 140°   B) 110°   C) 70°   D) 60°

38. The value of 7 is

A) 140°   B) 110°   C) 70°   D) 60°

Match the following/ Matrix Matching:

39. **Column - I**   **Column - II**

1) $2^{5n} \div 2^n = 2^4$ then n   p) 6

2) $\left(2^2\right)^n = \left(2^3\right)^4$ then n   q) 8

3) $2^{n-5} \times 5^{n-4} = 5$ then n   r) 1

4) $2^{n-4} \times 5^{n-4} = 1250$ then n   s) 5

A) 1 - r, 2 - s, 3 - p, 4 - q   B) 1 - s, 2 - r, 3 - p, 4 - q

C) 1 - r, 2 - p, 3 - s, 4 - q   D) 1 - q, 2 - p, 3 - r, 4 - s

40. **Column - I**   **Column - II**

1) Divide $\frac{5}{9}$ by $\frac{2}{3}$ p) $\frac{5}{6}$

2) Divide 28 by $\frac{7}{4}$ q) 16

3) Multiply $\frac{3}{5}$ by 25   r) $\frac{392}{5}$

4) Multiply $3\frac{4}{15}$ by 24   s) 15

A) 1 - q, 2 - p, 3 - r, 4 - s   B) 1 - q, 2 - p, 3 - s, 4 - r

C) 1 - p, 2 - q, 3 - s, 4 - r   D) 1 - p, 2 - q, 3 - r, 4 - s

PHYSICS

Single Response Type :

41. Heat is a form of energy which may only be _____

A) seen   B) felt   C) heard   D) see and felt.

42. The degree of hotness or coldness of the body is called

A) heat   B) temperature   C) pressure   D) force

43. Heat is a _____quantity.

A) vector   B) scalar   C) both A and B   D) none

Linked Comprehensive Type:

Temperature can be measured in °C and °F

44. The boiling point of water is

A) 180°C   B) 12°C   C) 40°C   D) 100°C

45.   The temperature of human body

A) 300K   B) 37 K   C) 310 K   D) 98.6 F

46.   The melting point of ice is

A) 0°C   B) 273°C   C) 40°C   D) 100°C

47.   A thermometer when put in a water bath at 27°C reads 300. The scale of the thermometer is in

A) Fahrenheit   B) Kelvin   C) Reaumur   D) none of these

48.   Normal temperature of the body of a healthy person is 98.4°F. Its equivalent in celsius scale is

A) 37°C   B) 40°C   C) 50°C   D) 100°C

49.   A degree on Celsius scale is _____ part of the interval between the ice point and the steam point.

A) $\dfrac{1}{180}$ th   B) $\dfrac{1}{80}$ th   C) $\dfrac{1}{100}$ th   D) $\dfrac{1}{120}$ th

Match the following/ Matrix Matching:

50.   **Column - I**   **Column - II**

a) Celsius scale (in °C)   p) Upper fixed point (steam point) is 212

b) Fahrenheit scale (in °F)   q) Lower fixed point (Ice point) is 0

c) Kelvin scale (in K)   r) Upper fixed point (steam point) is 80

d) Reaumer scale (°R)   s) Lower fixed point (Ice point) is 273

A) a - q, b - p, c - s, d - q,p   B) a - q, b - p, c - s, d - q,r

C) a - q, b - s, c - p, d - q,r   D) a - q, b - r, c - p, d - q,r

51.   When wind speed increases, air pressures

A) increases   B) decreases

C) remains constant   D) none of these

52.   What is the name given to the wind blowing from sea to land?

A) Thunderstorm   B) Land breeze   C) Sea breeze   D) cyclone

53.   Which one of the following statement is INCORRECT?

A) When air gets heated, it expands.

B) when air gets cooled, it contracts.

C) The warm air is heavier than cold air.

D) Air moves from high pressure region to low pressure region.

54.   The direction of airflow is also affected by Earth's rotation. It is called

A) Coriolis Effect   B) El nino Effect   C) La Nina Effect   D) Greenhouse Effect

55.   An instrument used to study the speed of winds is called,

A) manometer   B) anemometer   C) ammeter   D) speedometer

56. The word has been derived from Arabic word 'Mausam' which means season. The word is.

    A) Baarish   B) Monsoon   C) El Nino   D) Typhoon

57. With increase in temperature, atmospheric pressure.

    A) increases   B) decreases

    C) remains constant   D) can decrease or increase

58. Which one of the following is NOT recommended during Lightening or thunderstorm?

    A) Take Shelter in a bus or car.

    B) In a forest, seek shelter in a low area under a thick growth of small trees.

    C) Take shelter under isolated tree.

    D) Get away from tractors and other metal farm equipment.

59. Equator is a region of pressure while poles are regions of pressure.

    A) high, low   B) low, high   C) low, low   D) high, high

60. The eye of a cyclone is

    A) cloudy and highly stormy.   B) full of strong winds.

    C) calm and cloudless.   D) site with high atmospheric pressure.

CHEMISTRY

Single Response Type :

61. Why are cotton clothes more common than silk clothes?

    A) Cotton clothes are more beautiful   B) Cotton clothes are more durable

    C) Cotton clothes can be used rough   D) Cotton is less expensive than silk

62. Which breed of sheep produce good quality wool?

    A) Marwari   B) Lohi   C) Rampur buhair   D) Nail

63. Silk fibre are as strong as steel wire and made up of

    A) Glycogen   B) Lactones   C) Proteins   D) Fats

64. Which of the following is not found in both natural as well as artificial forms :

    A) Wool   B) Jute   C) Silk   D) Rubber

65. Which of the following acids is called king of chemicals?

    A) Hydrochloric acid B) Suphuric acid   C) Nitric acid   D) Formic acid

66. Which of the following substances is an acid?

    A) Alcohol   B) Sea water   C) Ammonia   D) Soap solution

67. The pH of basic solution is

    A) 1   B) 3   C) 7   D) 9

68. Melting of wax involves in

    A) Physical & chemical changes   B) Periodic & non – periodic changes

    C) Reversible & irreversible changes   D) Un desirable changes

69.   Which of the following is/are physical changes?

A) Freezing of ice.

B) Evaporation of water by the heat of sun.

C) Expansion and contraction of metals on heating.

D) All the above

70.   Which one of the following statement(s) is not correct for a chemical change?

A) Always new substances are produced .

B) It is a permanent change .

C) There is no net absorption or release of energy.

D) There is no change in the weight of the substances .

71.   Which of the following can sublime?

A) $(NH_2)_2CO$ B) NH_4Cl C) NH_4OH D) $(NH_4)_2CO_3$

72.   Sugar undergoes changes on heating which are

A) Reversible   B) irreversible   C) same   D) constant

73.   Copper sulphate solution changes from blue colour to green when iron is placed in it. It is a_____change.

A) chemical   B) physical   C) reversible   D) irreversible

74.   Water is _____in nature.

A) Acidic   B) Basic   C) Neutral   D) Amphoteric

75.   Change which can go back to its original shape is called

A) Reversible   B) irreversible   C) same   D) constant

76.   The pH of a sample Y is found to be 10. This sample may be which one of the following?

A) NaOH   B) HCl   C) Water   D) CH_3COOH

77.   Which gas turns lime water milky?

A) H_2 B) N_2 C) CO_2 D) SO_2

78.   Which acid is produced in our stomach?

A) HCl   B) H_2SO_4 C) Nitric acid   D) Acetic acid

79.   Which formula represents bleaching powder?

A) $Ca(OH)_2$ B) $CaOCl_2$ C) $CaCl_2$ D) CaO

80.   Which of the following natural sources contains oxalic acid?

A) lemon   B) orange   C) tomato   D) tamarind

BIOLOGY

Single Response Type :

81.   Removal of undigested food material in termed as

A) Ingestion   B) Egestion   C) Assimilation   D) Absorption

82.   The human Dental formula is

A) $\dfrac{2023}{2023}$ B) $\dfrac{2124}{2124}$ C) $\dfrac{2121}{2121}$ D) $\dfrac{2123}{2123}$

83.   Which of the following helps in Digestion

A) Hormones   B) Minerals   C) Enzymes   D) All of these

84.   Saliva hepls in digestion which is secreted by

A) Gastric glands   B) Intestinal glands   C) Salivary glands   D) Both B & C

Assertion and Reasoning Type:

85.   Assertion: Thick layers of muscles are present in the wall of alimentary canal.

Reason : The muscles help in mixing of food materials with enzymes coming from glands of alimentary canal

A) If both assertion and reason are true and reason is the correct explanation of assertion.

B) If both assertion and reason are true but reason is not the correct explanation of assertion.

C) If assertion is true but reason is false.

D) If assertion is false but reason is true.

Match the following/ Matrix Matching:

86.   **Column-I**   **Column-II**

(a) Autotrophs   (p) Carbohydrate

(b) Sugar   (q) Sucking

(c) Photosynthesis   (r) Chlorophyll

(d) Hydra   (s) Green plants

A) a - s, b - r, c - p, d - q   B) a - s, b - p, c - r, d - q

C) a - q, b - r, c - s, d - p   D) a - r, b - s, c - p, d - q

87.   Tiny pores found on the lower side of the leaves are called

A) Stomata   B) guard cell   C) both   D) None

88.   The process of taking in Co_2 by plants and releasing O_2 is component of

A) Transpiration   B) Respiration   C) Endosmosis   D) Photosynthesis

89.   Clayey soil is suitable because

A) It has good water holding capacity   B) It has humus in large quantity

C) It has very fine sand particle   D) It has large particle size

90.   The soil which is good for growing plants is

A) Laterite soil   B) Loamy soil   C) Desert soil   D) Alluvial soil

91. In loamy soil

A) Amount of large particles are more

B) Amount of small particles are more

C) Amount of large and small particles are same

D) Only small sized particles are present

92. Which of the following is the mixture of decomposed organic matter and is usually dark in colour?

A) Podzol   B) Clay   C) Humus   D) Loam

Assertion and Reasoning Type:

93. **Assertion :** A-Horizon is also known as top soil.

Reason : Bed rock is hard and difficult to dig with a spade.

(A) If both assertion and reason are true and reason is the correct explanation of assertion.

(B) If both assertion and reason are true but reason is not the correct explanation of assertion.

(C) If assertion is true but reason is false.

(D) If assertion is false but reason is true.

Match the following/ Matrix Matching:

94. **Column - I**   **Column - II**

a) Upper layer of soil   p) Large particles

b) Middle layer of soil   q All kind of soil

c) Sandy soil   r) Small particles

d) A home of living organism   s) Lesser amount of humus

e) Clayey soil   t) Dark colour

A) a - s, b - r, c - p, d - q, e - p   B) a - t, b - p, c - s, d - q, e - r

C) a - q, b - r, c - s, d - p, e - t   D) a - r, b - s, c - p, d - q, e - s

95. The major factors that effects soil development are

A) Time, climate and heat   B) Time, vegetation and slope

C) Time, vegetation and pressure   D) Climate, vegetation and time

96. Leaves are modified as thorns in which of these animals?

A) Orange   B) Cactus   C) Lemon   D) Rose

97. The temperature at poles dips as low as _____ degree Celsius.

A) -17   B) 0   C) -37.0   D) -27

98. Seal is found in

A) Mountain region   B) Tropical region   C) Temperate region   D) Polar region

99. **Assertion :** The camel stores excess fat in their hump of the body.

Reason : In absence of water fat get decomposed to produce water and energy.

A) If both assertion and reason are true and reason is the correct explanation of assertion.

B) If both assertion and reason are true but reason is not the correct explanation of assetion.

C) If assertion is true but reason is false.

D) If assertion is false but reason is true.

100. Why do coastal areas experience less contrast in weather condition?

A) Due to moderating effect of sea   B) Due to salty water

C) Due to heat   D) Due to land mass

****** **ALL THE BEST** ******