Time: 2 hours

SOS Hermann Gmeiner School Sanothimi

Full Marks: 100

Entrance Exam 2082/Grade VIII/Model Question

Instructions:

- There are altogether **96** questions. For every correct answer from Question No. 1 to 95, candidates will be awarded with1 full mark except question number **96** that carries 5 marks.
- There won't be any **negative marking in case of wrong answers**.
- Use of **pencil and calculator is prohibited.**
- Read the questions carefully and **Tick** (√) the correct answer under the options a, b, c and d

1. **To what expression must $a^2 +5a - 1$ be added to make the sum zero?**
   a. $a^2 + 5a - 1$ b. 0 c. $a^2 - 5a + 1$ d. $-a^2 - 5a +1$

2. **Which of the following expressions is not a polynomial?**
   a. $2x^2 + y^2$ b. $\frac{x}{2} - . \frac{y}{3}$ c. $\sqrt{5}$ xy   d. $x + \frac{1}{x}$

3. **A man bought some books for Rs 3150 and sold them for Rs 4275 by making Rs 125 profit in each, how many books did he buy and sell?**
   a. 9   b. 10   c. 12   d. 15

4. **What is the least number which is to be added to 3993 to make it a perfect square?**
   a. 103   b. 63   c. 36   d. 130

5. **If the abscissa of a point is -8 and its ordinate is 5, then its co-ordinate are …**

   a. $(-8, 5)$ b. $(8, -5)$ c. (-8, -5)   d. (8, 5)

6. **Which of the following is the improper subset of set A = {n, e, t}?**
   a. { }   b. {n, t}   c. {n, e}   d. {t, e, n}

7. **If the cost of 4 packets of milk is Rs 220, how many packets of milk can be bought for Rs 385?**
   a. 5   b. 6   c. 7   d. 9

8. **If $p^2 + \frac{1}{p^2} = 11$, what is the value of $(p - \frac{1}{p})$?**

a. 2   b. 3   c. 13   d. 11

9. What is the circumference of a circle with radius r cm?

a. $2\pi r$ b. πr c. πr^2 d. $2\pi r^2$

10. If x^0 is the exterior angle and 70^0 and 55^0 are its opposite interior angle of a triangle, what is the value of x^0?

a. 125^0 b. 15^0 c. 55^0 d. 110^0

11. Which of the following pair of ratios is not in proportion?

a. 5: 4 and 15:12   b. 6: 8 and 24:32   c. 24: 36 and 2:5   d. 3: 8 and 9:24

12. What is the value of $(\frac{8}{27})^{2/3}$?

a. $\frac{9}{4}$ b. $\frac{4}{9}$ c. $\frac{2}{3}$ d. $\frac{3}{2}$

13. What is the cardinal number of the set z={x: x is an integer, $-2 \le x \le 2$} ?

a. 1   b. 2   c. 3   d. 5

14. What value of x satisfies the equation x + 25% of x = 25?

a. 20   b. 10   c. 24   d. 25

15. If (2x +5) cm and (3x- 2) cm are the length of diagonals of a rectangle, what is the value of x?

a. 7cm   b. 3cm   c. 2cm   d. 5 cm

16. What is the value of $(2x)^0$, $x \neq 0$?

a. 2   b. $-2x$ c. 0   d. 1

17. What is the value of $\frac{2}{5}$ of $\frac{3}{4}$ 1 kg?

a. 200g   b. 250g   c. 300g   d. 150g

18. The base area of a cubical box is 2.25 sq.m, what is the volume of the cubical box?
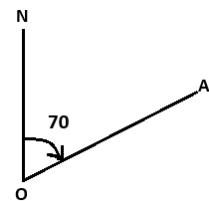
a. 1.5 cu.m   b.. 3.75cu.m   c. 3.375cu.m   d. 3.350cu.m

19. If average value (x) = 9, $\sum X = 80 + p$ and n=10, what is the value of p?

a. 17   b. 10   c. 9   d. 80

20. In the given figure, what is the bearing of point A from O ?

a. 070^0 b. 290^0 c. 020^0 d. 110^0

21. If $(2x)^0$ and $(3x)^0$ form a complementary angle, what is the measure of greater angle?.

a. 36^0 b. 54^0 c. 72^0 d. 108^0

22. Simplify: 0.582 - 0.89 + 0.3

a. 0.8   b. 0.0008   c. -0.008   d. 0.008

23. Find the least number which is exactly divisible by 14, 21 and 35.

a. 7   b.14   b. 70   d. 210

24. Which of the laws is called the quotient law of indices? (when m>n)

a. $a^m \times a^n = a^{m+n}$ b. $a^m \div a^n = a^{m-n}$ c. $a^0 = 1$ d. $(a^m)^n = a^{mn}$

25. Which of the following is an irrational number?

a. $\frac{2}{3}$ b. $\sqrt{5}$ c. $\sqrt{16}$ d. 0.3333..

26. If p=2 and q= 3, what is the value of -3 (p-q) ?

a. 3   b. -3   c. -9   d. 9

27. Which of the following expressions is not a monomial expression?

a. 5xyz   b. 7xy + 2xy   c. $(2xy)^2 - 3x^2y^2$ d. $2x^2y^3 + 3x^3y^2$

28. What will be the image of a point (-7, 4) under the reflection about y- axis?

a. (7, 4)   b. (7, -4)   c. (-7, 4)   d. (-7, - 4)

29. In any regular polyhedral with F faces, V vertices and E edges, which of the following relations hold?

a. V- E – F = 2   b. E + F – V= 2   c. V+ E – F =2   d. F +V –E = 2

30. What is the formula for the area of a parellogram?

a. $\frac{1}{2} b \times h$ b. $b \times h$ c. $\frac{1}{2} (b + h)$ d. $\frac{1}{2} (b - h)$

31. In which of the following condition, work is said to be done?

a. A person carries a bag across a room at constant speed
b. A force is applied but the object doesn't move
c. An object moves without applying force
d. A person lifts weight against gravity

32. A larger rock has more weight and smaller one has less weight. Which of the following is the cause?

a. Equal gravity on the both
b. More gravity on smaller rock
c. No relation between weight and mass
d. More gravity on the big rock

33. In a old bicycle, oil is applied to move the parts by reducing friction. What is the function of oil?

a. It increases temperature between moving surfaces and make the smooth movement.
b. It forms a thin layer that reduces direct contact between the surfaces
c. It increases the roughness of engine parts
d. It acts as barrier to reduce air resistance.

34. Saumya said that energy necessary for our body is obtained from food. Swarnim also argued that the energy we get from food is actually obtained from the sun. which of them is correct?

a. Saumya is correct but Swarnim is incorrect.
b. Both are incorrect
c. Saumya is incorrect but Swarnim is correct.
d. Both are correct.

35. Krishna and Hari measured their body temperature and noted 98.6°F and 40°C respectively. Choose the best option on the basis of their temperature.
a. Krishna has higher body temperature
b. Hari is suffering from fever
c. Krishna is suffering from fever
d. Both are suffering from fever

36. Which of the following is an example of heat transferred by conduction?
a. A metal spoon getting hot in a cup of hot water.
b. Warm air rises up
c. Water is boiling in a vessel
d. Sunlight heating the earth surface.

37. In which direction do the vibration of a molecule and propagation of wave take place in the sound wave?
a. In the same direction
b. In opposite direction
c. Perpendicularly
d. In different direction

38. It is impossible to talk on the moon surface because of the absence of………………...
a. Gravity
b. Air
c. Vacuum
d. Water

39. A mirror having flat reflecting surface is called………
a. Curved
b. Plane
c. Concave
d. Convex

40. Which of the following statement is correct regarding the image formed by a plane mirror?
a. The image is always real, inverted and smaller than the object
b. The image is always real and same size of the object
c. The image is always inverted located at the different position than the object
d. The image is always virtual, upright and same size as the object

41. Which of the following statements is true for the combination of cells?
a. Cells are connected in series combination to light bulb for long time.
b. Cells are connected in series combination to light bulb brightly for a short time.
c. More cells are connected in parallel combination to increase brightness of bulb
d. Constant and less current is supplied for a long time in series combination

42. The type of electricity produced from friction between two objects is
a. Current electricity
b. Static electricity

c. Hydroelectricity
d. Solar electricity

43. Which of the following group exemplifies physical change?
a. Ice turns into water, rusting of iron, making a cupboard from wood
b. Milk turns to curd, iron rusting, water freezes to ice
c. Grinding a lump of salt into powder, water freezes to ice, making a table from wood
d. Making a chair from wood, crushing lump of salt, rusting of iron

44. Which of the following gas is dissolved in cold drinks?

a. Oxygen   b. Carbon- dioxide

c. Nitrogen   d. Sulphur-dioxide

45. Which of the following salt is used in the plastering fractured bones?

a. Magnesium sulphate   b. Sodium hydroxide

c. Calcium sulphate   d. Potassium sulphate

46. Which atoms are present in the molecule of ammonia?

a. N and O   b. H and O

c. C and O   d.N and H

47. Ash water is slippery due to its……………. nature.

a. Acidic   b. alkaline   c.Salty   d. Sweet

48. Which of the following is an ore of gold metal?

a. Bauxite   b. Hematite   c. Argentite   d. Calaverite

49. Which of the following series exemplifies metamorphic rock?

a. Obsidian, pumice, marble, graphite   b. Shale, limestone, granite, graphite

c. Slate, Obsidian, pumice, marble   d. Diamond, Gneiss, Marble, slate

50. Which statement and arguments are correct?

Statement: Jupitar has a big red spot at the central part of it

Argument 1: Jupitar is the fastest rotating planet.

Argument 2: Jupitar has 62 satellites.

a. Statement and argument 1 are correct   b. Both arguments are correct

c. Statement and argument 2 are correct   d. Both arguments are incorrect

51. Which of the following best defines a hypothesis in the scientific method?
   a. A random guess   b. A testable explanation
   c. A final conclusion   d. A controlled experiment
52. Which component of a computer stores the BIOS?
   a. RAM   b. ROM   c. Hard drive   d. Cache memory
53. Which plant organ stores starch in a modified form in potatoes?
   a. Root   b. Stem   c. Leaf   d. Flower
54. Which structure in flowering plants is responsible for double fertilization?
   a. Pollen grain   b. Ovule   c. Embryo sac   d. Anther

55. Which feature is unique to echinoderms?
    a. Radial symmetry in larvae   b. Water vascular system
    c. Segmented body   d. Exoskeleton

56. What happens if lysosomes rupture within a cell?
    a. Increased protein synthesis   b. Cell digestion and death
    c. Uncontrolled cell division   d. Faster metabolic activity

57. Which of the following best describes the function of myelin in nerve cells?
    a. Generates impulses   b. Increases transmission speed
    c. Produces neurotransmitters   d. Stores memory

58. What is the primary cause of micro plastic pollution?
    a. Industrial chemicals   b. Degradation of synthetic polymers
    c. Agricultural runoff   d. Excessive paper waste

59. Which of the following is the best long-term solution for reducing dependence on fossil fuels?
    a. Using biofuels   b. Investing in solar and wind energy
    c. Increasing coal mining   d. Expanding petroleum refineries

60. Which organ is responsible for detoxifying harmful substances in the body?
    a. Kidney   b. Lungs   c. Liver   d. Spleen

61. The function of pleural fluid in the lungs is to:
    a. Absorb oxygen   b. Reduce friction during breathing
    c. Transport carbon dioxide   d. Regulate blood pressure

62. In a plant, the movement of sugars occurs through….
    a. Phloem   b. Xylem   c. Stomata   d. Epidermis

63. Which of the following is a reversible physical change?
    a. Rusting of iron   b. Cooking rice   c. Melting of wax   d. Burning paper

64. What is the function of citric acid in biological systems?
    a. Protein synthesis   b. DNA replication
    c. Cellular respiration in mitochondria   d. Breaking down starch

65. Which mineral is essential for the production of thyroxine hormone?
    a. Calcium   b. Iron   c. Iodine   d. Magnesium

66. The work done by a force depends on:
    a. Mass and acceleration   b. Force and displacement
    c. Pressure and volume   d. Time and distance

67. Which principle explains why objects float or sink in a liquid?
    a. Newton's first law   b. Archimedes' principle
    c. Boyle's law   d. Pascal's principle

68. When light enters a denser medium from a rarer medium, it:
    a. Bends towards the normal   b. Bends away from the normal
    c. Travels in a straight line   d. Becomes completely absorbed

69. The function of a fuse in an electric circuit is to:
    a. Prevent excessive current flow   b. Store electrical energy
    c. Increase current   d. Convert AC to DC

70. The main purpose of white blood cells in the immune response is to:
    a. Destroy pathogens   b. Produce hemoglobin
    c. Transport nutrients   d. Carry oxygen

Read the passage below and answer questions 71 to 75.

Walls and wall building have played a very important role in Chinese culture. These people, from the dim mists of prehistory have been wall-conscious; from the Neolithic period – when ramparts of pounded earth were used - to the Communist Revolution, walls were an essential part of any village. Not only towns and villages; the houses and the temples within them were somehow walled, and the houses also had no windows overlooking the street, thus giving the feeling of wandering around a huge maze. The name for "city" in Chinese (ch'eng) means wall, and over these walled cities, villages, houses and temples presides the god of walls and mounts, whose duties were, and still are, to protect and be responsible for the welfare of the inhabitants. Thus a great and extremely laborious task such as constructing a wall, which was supposed to run throughout the country, must not have seemed such an absurdity.

However, it is indeed a common mistake to perceive the Great Wall as a single architectural structure, and it would also be erroneous to assume that it was built during a single dynasty. For the building of the wall spanned the various dynasties, and each of these dynasties somehow contributed to the refurbishing and the construction of a wall, whose foundations had been laid many centuries ago. It was during the fourth and third century B.C. that each warring state started building walls to protect their kingdoms, both against one another and against the northern nomads. Especially three of these states: the Ch'in, the Chao and the Yen, corresponding respectively to the modern provinces of Shensi, Shanzi and Hopei, over and above building walls that surrounded their kingdoms, also laid the foundations on which Ch'in Shih Huang Di would build his first continuous Great Wall.

The role that the Great Wall played in the growth of Chinese economy was an important one. Throughout the centuries many settlements were established along the new border. The garrison troops were instructed to reclaim wasteland and to plant crops on it, roads and canals were built, to mention just a few of the works carried out. All these undertakings greatly helped to increase the country's trade and cultural exchanges with many remote areas and also with the southern, central and western parts of Asia – the formation of the Silk Route. Builders, garrisons, artisans, farmers and peasants left behind a trail of objects, including inscribed tablets, household articles, and written work, which have become extremely valuable archaeological evidence to the study of defense institutions of the Great Wall and the everyday life of these people who lived and died along the wall.

71. Chinese cities resembled a maze because ------------------------.

a. because they were walled.   b. because the houses has no external windows.

c. because the name for cities means 'wall'   d. because walls have always been important there.

72. Constructing a wall that ran the length of the country -------------------------------.

a. honoured the god of walls and mounts.   b. was an absurdly laborious task.

c. may have made sense within Chinese culture.   d. made the country look like a huge maze.

73. The Great Wall of China --.

a. was built in a single dynasty   b. was refurbished in the fourth and third centuries BC.

c. used existing foundations.   d. was built by the Ch'in, the Chao and the Yen.

74. Crops were planted --------------------.

a. on wasteland.   b. to reclaim wasteland.   c. on reclaimed wasteland. d. along the canals.

75. The Great Wall-----------------------.

a. helped build trade only inside China.   b. helped build trade in China and abroad.

c. helped build trade only abroad.   d. helped build trade only to remote areas.

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76. ---------whale is an endangered species.
a. a   b. an   c. the   d. X (nothing)

77. Everyone objected to her coming along with us, -----------------?
a. didn't he   b. didn't they   c. did someone   d. did they

78. There were lots of flies sitting ----------the wall of the drawing room.
a. in   b. at   c. on   d. by

79. Cancer can be successfully treated--------------detected in an initial stage.
a. unless   b. if   c. after   d. even when

80. The animals -----------to survive in the wild, rather than kept in captivity.
a. are helping   b. have been helping c. should be helped   d. could be helped

81. The students as well as the teacher -------------preparing hard for the SEE.
a. has been   b. have been   c. is   d. was

82. We didn't feel hungry as we ----------------our lunch before we left home.
a. had   b. have   c. had had   d. has had

83. Believe me or not, apart from our parents, others are fair-weather friends i. e. they -------.
a. help all the time   b. desert you in times of trouble
c. speak ill of others all the time   d. are of no use at any point of time

84. "I returned from abroad last night", said my neighbor i.e. --------------.
a. My neighbor said that he returned from abroad last night.
b. My neighbor says that he had returned from abroad last night.
c. My neighbor said that he had returned from abroad the previous night.
d. My neighbor said that had had returned home last night.

85. Which pair of words is wrongly spelt?
a. practice/practise
b. neighbour/neighbor
 c. stationary/stationery
d. maitinance/maintenance

86. Who is bothering you? It can be changed into passive as----------------.
a. Whom are you being bothered?
b. By whom are you bothered?
c. Who are you bothering to?
d. By whom are you being bothered?

87. Sometimes we must -----------for our own view.
a. stand off
b. stand on
c. stand out
d. stand back

88. The sergeant made the criminal ----------------------the truth.

a. revealed
b. to reveal
c. reveal
d. have revealed

89. Her brothers, ------------lives in this city, fly to visit her every so often.

a. both of whom
b. whom both
c. either of whom
d. neither of whom

90. Failure to carry admit card to the exam hall is not considered as a _trivial_ issue. Opposite of _trivial_ is------.

a. Underrated
b. kind
c. problematic
d. serious

91. Which one of the following pairs is not masculine famine pair?

a. stallion/mare
b. rooster/hen
c. goose/geese
d. fox/vixen

92. Which one of the following verbs is an irregular verb?

a. blow
b. cling
c. ride
d. all of them

93. Hey! What are you cooking in the kitchen? It smells --------------.

a. tastily
b. nicely
c. freshly
d. lovely

94. I have ----------------vacation. What about you?

a. two weeks's
b. two-weeks'
c. two weeks'
d. two-weeks

95. Is the width of the sky -----------------measurable?

a. im
b. un
c. on
d. in

96. Write an essay in three paragraphs on the topic "Social Media should be Banned".