



INTSO EDUCATION

SCIENCE TALENT SEARCH OLYMPIAD (STSO) 2016-17

STAGE - 1

TIME : 60 min.

CLASS : VII

Max. Marks : 50

Instructions:

- ⇒ Fill the OMR sheet completely and carefully.
- ⇒ Each question carries one mark and has only one correct answer. No negative marks
- ⇒ The question paper contains 50 questions to be answered in 60 minutes.

PHYSICS

1. The temperature, at which centigrade thermometer and kelvin thermometer give the same reading is []
1) 4° 2) 273° 3) 0° 4) Not possible
2. The angle between incident ray and reflected ray is 70°. What will the incident angle []
1) 30° 2) 35° 3) 40° 4) All the above
3. Which of the following is the best reflector of light []
1) plastic plate 2) plane mirror 3) wall 4) paper
4. A body moving with a constant velocity will have []
A) constant speed B) constant acceleration
C) zero speed D) zero acceleration
1) A, B are correct 2) B,C are correct 3) A, D are correct 4) Only 'D' is correct
5. Among the following temperatures, the highest is []
1) 100K 2) - 13°F 3) - 20 °C 4) - 23 °C
6. The scale of temperature independent on thermal properties of a substance is []
1) Celsius 2) Fahrenheit 3) Kelvin 4) Rankine scale
7. A passenger train of 100 m long is moving with a uniform velocity 90 kmph. The time taken to cross a bridge of length 500 m is []
1) 20 s 2) 16 s 3) 24 s 4) 4 s
8. The mirror to be used to obtain a parallel beam of light from a small lamp is []
1) Plane mirror 2) convex mirror 3) concave mirror 4) all
9. A man of height 6 ft observes his image to be 4 ft height and erect, then the mirror used is []
1) Concave 2) Convex 3) Plane 4) All
10. The battery cells in the torchlight are kept in []
1) series 2) parallel
3) neither series nor parallel 4) none
11. Identify the correct relations for the following []
i) $speed = \frac{distance}{time}$ ii) $time = \frac{speed}{distance}$ iii) $time = \frac{distance}{speed}$ iv) $distance = \frac{speed}{time}$
1) i, iii are correct 2) ii, iv are correct 3) i, iv are correct 4) all the above
12. A runner runs 100 m in 10 s, then turns around jogs 50 m backward the starting point in 30s . Then his average speed (in m/s) []
1) 1.25 2) 2.5 3) 3.75 4) 4

13. Match the following : []
- | Column - I | Column - II |
|-----------------------------------|-----------------------------------|
| i) Thermometer | p) instantaneous speed |
| ii) Anemo meter | q) wind speed |
| iii) Barometer | r) temperature |
| iv) Speedo meter | s) atmospheric pressure |
| 1) i - r, ii - q, iii - p, iv - s | 2) i - r, ii - p, iii - q, iv - s |
| 3) i - r, ii - q, iii - s, iv - p | 4) i - q, ii - r, iii - s, iv - p |
14. Identify the correct statements []
- Statement (A) :** The device used to close (or) open an electric circuit is switch
Statement(B) : In series circuit the electricity has only one path.
Statement(C) : Safety device used in electric circuit is fuse
- 1) A, B, C are true 2) Only A, B are true 3) Only A, C are true 4) None
15. Suppose in a house there are two bulbs of 40 w each, two fans of 100w each. All of them are used for two hours a day. Find the cost of electric energy used in 30 days at Rs 3.00 per unit. []
- 1) 50.4 Rs 2) 504 Rs 3) 25.2 Rs 4) 252 Rs
16. If the reflecting surface is convex, then it is called as _____ mirror []
- 1) convex 2) concave 3) plane 4) all
17. The number of images increases when we _____ the angle between two mirrors []
- 1) increase 2) reduce
 3) either increases (or) decrease 4) none
- CHEMISTRY**
18. $CuSO_4 + Zn \rightarrow ZnSO_4 + Cu$. The type of the reaction is []
- (Blue) (colourless) (Red)
- 1) chemical combination 2) chemical decomposition
 3) chemical displacement 4) chemical double decomposition
19. Which of the following is the correct equation for precipitation reaction []
- 1) $H_2SO_4 + 2NaOH \rightarrow Na_2SO_4 + H_2O$ 2) $AgNO_3 + NaCl \rightarrow AgCl \downarrow + NaNO_3$
 3) $CaO + H_2O \rightarrow Ca(OH)_2$ 4) $CaCO_3 \xrightarrow{heat} CaO + CO_2$
20. Strong acids have a p^H scale of []
- 1) 0 – 7 2) 6 – 8 3) 11 – 15 4) 0 – 4
21. Mrs. Veena set up two beakers that contain the same amount of water, she has two blocks of different materials that the labels “A” and “B” she places one block in each beaker, block A sinks and block B floats why ? []
- 1) Block A has a lower density than the water 2) Block B has a higher density than the water
 3) Block A has a higher density than the water 4) Block A has a density equal to Block B
22. Methyl orange is []
- 1) Red in acidic medium, yellow in basic medium
 2) yellow in acidic medium, red in basic medium
 3) colourless in acidic medium, red in basic medium
 4) red in acidic medium, colourless in basic medium
23. Aluminium oxide is []
- 1) acidic nature 2) basic nature 3) amphoteric nature 4) neutral
24. Household products such as window cleaners contains []
- 1) $Ca(OH)_2$ 2) $Mg(OH)_2$ 3) NaOH 4) NH_4OH

25. Alloy of German silver constituents are []
 1) Cu 60 - 80%, & Zn 20 - 40% 2) Cu 75 - 90%, & Sn 10 - 25%
 3) Cu 56%, Zn 24%, Ni 20% 4) Pb 82%, Sb 15%, Sn - 3%
26. The Nucleus of an atom consists of []
 1) Electrons & Neutrons 2) Electrons & Protons
 3) Protons & Neutrons 4) All of the above
27. The mass of one molecule of water is approximately []
 1) 1g 2) 0.5g 3) 1.66×10^{-24} g 4) 3×10^{-23} g
28. What compounds of fluorine are added to toothpaste to prevent dental decays formation of dental cavities []
 1) Calcium fluoride & Argentous fluoride 2) Zinc fluoride & Mercurous fluoride
 3) Sodium fluoride & Stannous fluoride 4) Magnesium fluoride & Aurous fluoride
29. The chemical formula of washing soda is []
 1) $\text{Na}_2\text{CO}_3, 10\text{H}_2\text{O}$ 2) NaHCO_3 3) CaCO_3 4) NOOH
30. Ant releases this acid _____ []
 1) Citric acid 2) Formic acid 3) Lactic acid 4) Oxalic acid
31. The chemical formula of calcium carbonate []
 1) $\text{Ca}(\text{OH})_2$ 2) CaCO_3 3) CO_2 4) CaSO_4
32. Hydrogen gas is discovered by []
 1) Henry cavendish 2) Lavoiser 3) Mosley 4) Rutherford
33. Hydrated copper sulphate is commonly called []
 1) Green vitriol 2) Blue vitriol 3) White vitriol 4) None of these
34. A solution reacts with egg shell it releases CO_2 gas []
 1) HNO_3 2) NaCl 3) $\text{Mg}(\text{OH})_2$ 4) KCl

BIOLOGY

35. A person has boiled a potato, it contains the following food component []
 1) Cellulose 2) Lactose 3) Glucose 4) Starch
36. Ramu became very weak and lean and doctor advised him to take specially more meat, lentils, milk and eggs in his diet. What may be the disease that ramu is suffering from []
 1) Rickets 2) Kwashiorkor 3) Anaemia 4) Muscle tremors
37. I am a micronutrient present in fresh fruits and vegetables, I am heat sensitive and can not be stored in body. 'I' also helps in collagen formation. Who am 'I' []
 1) Vitamin Calciferol 2) Mineral phosphorus
 3) Vitamin Retinol 4) Vitamin Ascorbic acid
38. Study the following []
- | | |
|---|---|
| <p>List - I</p> <p>(i) Roughages
 (ii) Carbohydrates
 (iii) Vitamins
 (iv) Proteins
 (v) Fats</p> <p>Match the correct combination</p> <p>1) i - 3, ii - 1, iii - 4, iv - 5, v - 2
 3) i - 5, ii - 2, iii - 4, iv - 3, v - 1</p> | <p>List - II</p> <p>1) Instant energy giving foods
 2) Energy giving foods
 3) Bulk forming food
 4) Micro-nutrients
 5) Body building</p> <p>2) i - 2, ii - 1, iii - 4, iv - 5, v - 3
 4) i - 3, ii - 5, iii - 1, iv - 4, v - 2</p> |
|---|---|

39. We require different quantities of carbohydrates, proteins, fats according to **(i) and (ii)** of individuals **(iii) and (iv)** need more proteins containing food like **(v), (vi)**. We also need minute quantities of food components like **(vii), (viii)** to keep us healthy. []
Identify **i to viii** respectively.
- 1) i - age, ii - need, iii - growing children, iv - adolescents, v - milk, vi - meat/pulses, vii - vitamins, viii - minerals.
2) i - need, ii - requirement, iii - adolescents, iv - growing children, v - meat, vi - nuts, vii - water, viii - roughages
3) i - age, ii - need, iii - growing children, iv - adults, v - egg, vi - oils, vii - minerals, viii - water
4) i - age, ii - requirement, iii - adults, iv - adolescents, v - milk, vi - meat/pulses, vii - vitamins, viii - water.
40. The entire process of silk production starting from growing on mulberry plants, collection of eggs, rearing of caterpillars, production of cocoons and finally obtaining raw silk fibre is called as
1) Sericulture
2) Apiculture []
3) Selvi culture
4) Horti culture
41. Separation of unwanted materials from wool is called []
1) Shearing
2) Bleaching
3) Wool classing
4) Scouring
42. Woolen threads in power looms that go side to side and top to bottom are respectively called
1) Warp threads; Weft threads
2) Weft threads; Warp threads []
3) Knitting threads ; Warp threads
4) Weft threads; Knitting threads
43. In which of the following silk is used. []
I. In Textile industry
II. In medicinal field
III. In fire extinguishers
IV. In Aviation industry
1) I, II, III
2) I, IV only
3) I, III, IV
4) I, II, IV
44. The shining appearance of silk is due to []
1) Soft, silky texture of silk fibres
2) Triangular prism like structure of silk fibres
3) Smooth quality of silk fibres
4) The food taken by silk moth
45. Arrange the following steps of wool processing in correct order []
I. Shearing
II. Dyeing
III. Combing
IV. Spinning
V. Bleaching
VI. Scouring
VII. Rolling
VIII. Weaving
IX. Sorting
X. Woolen fabric
1) I, VI, V, II, IV, VIII, III, VII, IX, X
2) I, VI, IX, III, VIII, II, IV, VII, V, X
3) I, VI, IX, V, II, III, IV, VIII, VII, X
4) I, IX, VII, VIII, IV, III, V, VI, II, X
46. The internal factors of photosynthesis are []
1) Glucose, Oxygen
2) Chlorophyll only
3) Chlorophyll, Oxygen
4) Water, Chlorophyll
47. Stephen Hales described about the leaves as organs of _____ []
1) Respiration
2) Transpiration
3) Excretion
4) Photosynthesis
48. Observe the following equation $6\text{CO}_2 + 12\text{H}_2\text{O} \xrightarrow[\text{chlorophyll}]{\text{light}} \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{H}_2\text{O} + 6\text{O}_2$
In this, the O_2 is formed from []
1) CO_2
2) Light
3) H_2O
4) Chlorophyll
49. *Cuscuta* is a []
1) Partial parasite
2) Complete parasite
3) Epiphyte
4) Symbiont
50. The opening and closing of stomata is controlled by []
1) Sun light
2) Chloroplasts
3) Guard cells
4) Humidity