



# INTSO EDUCATION

## SCIENCE TALENT SEARCH OLYMPIAD (STSO) 2016-17

STAGE - 1

TIME : 60 min.

CLASS : V

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 workdone by a force on an object can be [ ]  
1) Zero                      2) Positive                      3) Negative                      4) All the above
2. The mechanical energy of a body is equal to [ ]  
1) Only kinetic energy                      2) Only potential energy  
3) Sum of kinetic and potential energies                      4) Difference of kinetic and potential energies
3. The distance between your school to home is 0.5 km then express its value in metre [ ]  
1) 50 m                      2) 500 m                      3) 5 m                      4)  $\frac{5}{100}$  m
4. The standard measure of a physical quantity is called [ ]  
1) Unit                      2) Norm                      3) Ace                      4) Grade
5. 1 joule is equal to \_\_\_\_\_ [ ]  
1) 1 Nm                      2) 1 dyne cm                      3) 1 kJ                      4)  $10^5$  dyne cm
6. The quantity of matter present in an object is called [ ]  
1) Weight                      2) Volume                      3) Mass                      4) Density
7. SI unit of length is [ ]  
1) m                      2) km                      3) mm                      4) cm
8. The gravitational force act on a body gives its [ ]  
1) Mass                      2) Volume                      3) Density                      4) Weight
9. When a ball falls down, then the air resistance act on it is [ ]  
1) Upward direction                      2) Downward direction  
3) Either upward (or) downward                      4) Neither upward nor downward
10. The sole of shoes are worn out due to \_\_\_\_\_ force [ ]  
1) Magnetic                      2) Frictional                      3) Mechanical                      4) Muscular
11. The work done against the following force will be stored in the form of potential energy [ ]  
1) Gravitational force                      2) Frictional force                      3) Tension force                      4) All the above
12. The least measurement that can be measured by the wall clock is \_\_\_\_\_ [ ]  
1) 1 day                      2) 1 hour                      3) 1 minute                      4) 1 second
13. Kinetic energy is the energy possessed by a body by virtue of its [ ]  
1) Position                      2) Gravity                      3) Mass                      4) Motion

14. The energy possessed by water stored in dam is \_\_\_\_\_ energy. [   ]
- |                               |                     |
|-------------------------------|---------------------|
| 1) Potential                  | 2) Kinetic          |
| 3) Both potential and kinetic | 4) It has no energy |
15. One mean solar day is equal to [   ]
- |            |                |             |                  |
|------------|----------------|-------------|------------------|
| 1) 24 hour | 2) 1440 minute | 3) 86,400 s | 4) all the above |
|------------|----------------|-------------|------------------|
16. At present the system of measurement adopted by all scientists in the world is : [   ]
- |        |        |        |       |
|--------|--------|--------|-------|
| 1) MKS | 2) CGS | 3) FPS | 4) SI |
|--------|--------|--------|-------|
17. At what point in a reservoir do the water contain the most gravitational potential energy [   ]
- |   |   |
|---|---|
| 1) At the top before they start falling | 2) When they first begin moving           |
| 3) When they are halfway to the bottom  | 4) When they reach the bottom of the fall |

### CHEMISTRY

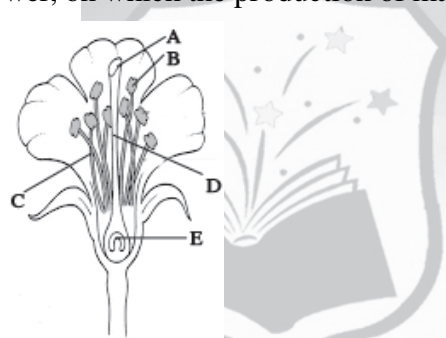
18. Hydrogen is the lightest , most abundant element in the universe but in the earth's crust it is the ninth most abundant element, the percentage of hydrogen of earth's weight is [   ]
- |          |         |          |          |
|----------|---------|----------|----------|
| 1) 0.01% | 2) 0.9% | 3) 0.09% | 4) 0.03% |
|----------|---------|----------|----------|
19. The isotope of hydrogen which is used in nuclear reactors in the form of heavy water is [   ]
- |            |              |            |        |
|------------|--------------|------------|--------|
| 1) Protium | 2) Deuterium | 3) Tritium | 4) all |
|------------|--------------|------------|--------|
20. Short hand representation of a chemical reaction is called [   ]
- |                     |           |                      |                     |
|---------------------|-----------|----------------------|---------------------|
| 1) Chemical formula | 2) Symbol | 3) Chemical equation | 4) Any one of these |
|---------------------|-----------|----------------------|---------------------|
21. Oxygen is collected in the laboratory [   ]
- |                                      |                                  |
|--------------------------------------|----------------------------------|
| 1) by downward displacement of water | 2) by collecting in a cylinder   |
| 3) by downward displacement of air   | 4) by upward displacement of air |
22. The formula of rust is [   ]
- |                            |   |  |   |
|----------------------------|---|--|---|
| 1) $\text{Fe}_2\text{O}_3$ | 2) $\text{FeO} \cdot 2\text{H}_2\text{O}$ | 3) $\text{Fe}_2\text{O}_3 \cdot \text{XH}_2\text{O}$ | 4) $\text{F}_3\text{O}_4 \cdot \text{XH}_2\text{O}$ |
|----------------------------|---|--|---|
23. **Statement (A) :** Alloying of iron prevents the iron from rusting. [   ]  
**Statement (B) :** Iron on alloying cannot react with oxygen easily.  
**Statement (C) :** In Galvanization, the zinc metal coated on iron.  
 1) All the statements A, B and C are correct  
 2) All the statements A, B and C are incorrect  
 3) Statements A & B are correct and statement C is incorrect  
 4) Statements A & B are incorrect and statement C is incorrect
24. If few drops of petroleum are poured on your palm, you feel cool as the petrol evaporates. This change is [   ]
- |                |                    |                |                    |
|----------------|--------------------|----------------|--------------------|
| 1) slow change | 2) chemical change | 3) endothermic | 4) periodic change |
|----------------|--------------------|----------------|--------------------|
25. **Set - A** [   ]
- |   |                                 |
|---|---------------------------------|
| i) Formation of table salt from an acid and base (NaOH)   | p) Chemical combination         |
| ii) Burning of magnesium in presence of oxygen            | q) Chemical displacement        |
| iii) Iron nail placed in copper sulphate solutions        | r) Chemical decomposition       |
| iv) Formation of $\text{H}_2$ and $\text{O}_2$ from water | s) Chemical double displacement |
- |      |    |     |    |  |      |    |     |    |
|------|----|-----|----|--|------|----|-----|----|
| i    | ii | iii | iv |  | i    | ii | iii | iv |
| 1) s | p  | q   | r  |  | 2) s | r  | q   | r  |
| 3) r | p  | q   | s  |  | 4) p | q  | r   | s  |

26. The formula of Sodium Carbonate is [ ]  
 1)  $\text{NaHCO}_3$                       2)  $\text{Na}_2\text{CO}_3$                       3)  $\text{NaCO}_3$                       4)  $\text{NaCl}$
27.  $\text{Al}_2(\text{CO}_3)_3 + x \text{HNO}_3 \rightarrow y \text{Al}(\text{NO}_3)_3 + z \text{CO}_2 + 3\text{H}_2\text{O}$   
 Identify the value of x,y,z in balanced equation [ ]  
 1)  $x = 1, y = 6, z = 3$     2)  $x = 3, y = 2, z = 3$     3)  $x = 6, y = 2, z = 3$     4)  $x = 6, y = 3, z = 3$
28. The correct symbols of the elements Gold , Mercury and Cobalt are respectively [ ]  
 1) Go, Me , Co                      2) Au, Me, Co                      3) Au, Hg, CO                      4) Au, Hg, Co
29. Choose the correct chemical formula formed by the higher valency of stannum and chloride radicals [ ]  
 1)  $\text{SnCl}_2$                       2)  $\text{SnCl}_3$                       3)  $\text{SnCl}_4$                       4)  $\text{SnCl}_5$
30. Mass number of Beryllium is [ ]  
 1) 7                      2) 9                      3) 12                      4) 14
31. Which of the following is physical change ? [ ]  
 1) rusting of iron                      2) curdling of milk                      3) boiling of water                      4) burning of paper
32. Which of the given change is a fast change ? [ ]  
 1) ripening of fruit                      2) lighting of match stick  
 3) rusting of iron                      4) all
33. **Statement (A) :** Burning of coal is not a physical change [ ]  
**Statement (B) :** Burning of fuel is irreversible change  
**Statement (C) :** Formation of day and nights is a periodic change  
 1) All the statements A, B and C are correct  
 2) All the statements A, B and C are incorrect  
 3) Statements A & B are correct and statement C is incorrect  
 4) Statements A & B are incorrect and statement C is incorrect
34. In a chemical reaction a compound decomposes into two or more substances, then the chemical reaction is [ ]  
 1) chemical combination                      2) chemical decomposition  
 3) chemical displacement                      4) chemical double decomposition

## BIOLOGY

35. Match the following : [ ]
- |                               |                               |
|-------------------------------|-------------------------------|
| A. Dispersal by wind          | 1. Lady's finger              |
| B. Dispersal by explosion     | 2. Guava                      |
| C. Dispersal by animal        | 3. Sugar cane                 |
| D. Dispersal by water         | 4. Milk weed                  |
|                               | 5. Coconut                    |
| 1) A - 4, B - 3, C - 2, D - 5 | 2) A - 4, B - 1, C - 2, d - 5 |
| 3) A - 2, B - 5, C - 1, D - 4 | 4) A - 1, B - 2, C - 3, D - 5 |
36. Observe the above seed, and identify its method of dispersal [ ]
- 1) Water  
 2) Animal  
 3) Wind  
 4) Explosion



37. Seeds of Hydrilla, Lotus and Water lily are dispersed by water; because [     ]  
 1) They have hair like structures                      2) They are heavy in weight  
 3) They have thick covering over them                4) They are light and spongy
38. Plumule of the seed gives out X and radicle of the seed produces Y. X and Y from the above statement are respectively [     ]  
 1) X - Root system; Y - Leaves                      2) X - Shoot system; Y - Flower  
 3) X - Root system; Y - Shoot system                4) X - Shoot system; Y - Root system
39. Which of the following is a dicotyledonous seed [     ]  
 1) Pumpkin                      2) Paddy                      3) Maize                      4) Wheat
40. Which part of a flower develops into fruit [     ]  
 1) Ovary                      2) Ovule                      3) Anther                      4) Thalamus
41. A Lion easily detect the presence of its prey, by the following adaptation. [     ]  
 1) By the presence of Brown fur                      2) By acute sense of smell  
 3) By Fast running capacity                      4) By strong sense of vision
42. The plants, that produce seeds and fruits are called [     ]  
 1) Bisexuals                      2) Non - flowering plants  
 3) Flowering plants                      4) Unisexuales
43. Identify the part of a flower, on which the production of male gametes occur [     ]  
 1) B  
 2) E  
 3) A  
 4) C
- 
44. Self pollination is seen in [     ]  
 1) Rose                      2) Jasmine                      3) Hibiscus                      4) Orchids
45. Which of the following is a perfect flower [     ]  
 1) Pea                      2) Watermelon                      3) Maize                      4) Papaya
46. Male gamete → A → B → C → D [     ]  
 Identify the pathway, through which male gamete reaches the female gamete  
 1) Ovary → Style → Stigma → Egg cell                      2) Stigma → Style → Ovary → Egg cell  
 3) Egg cell → Stigma → Style → Ovary                      4) Style → Stigma → Ovary → Egg cell
47. Female reproductive part of a flower is [     ]  
 1) Calyx                      2) Corolla                      3) Pistil                      4) Androecium
48. Animals living in the polar region, have the following adaptation to provide heat to the body [     ]  
 1) Thick layer of Fat beneath the skin                      2) Thick layer of proteins beneath the skin  
 3) Body is covered by Feathers                      4) All the above
49. Some animals remain inactive during winter season, this is known as [     ]  
 1) Hibernation                      2) Aestivation                      3) Migration                      4) Diapause
50. Camels prevent the entry of dust particles by having [     ]  
 1) Long Eyelashes                      2) Large Eyes                      3) Long Legs                      4) Wide Nostrils