



INTSO EDUCATION

SCIENCE TALENT SEARCH OLYMPIAD (STSO) 2016-17

STAGE - 1

TIME : 60 min.

CLASS : IV

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.

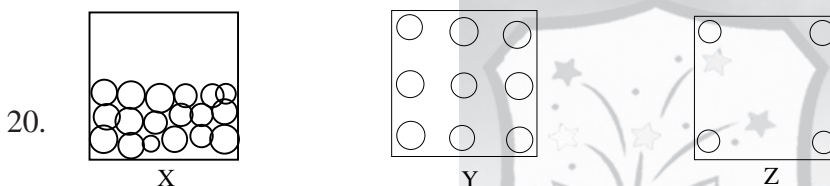
PHYSICS

1. A simple machine which is used to remove a nail from the wall is []
1) Lever 2) Cutting player 3) Hammer 4) Knife
2. You are seeing your image in mirror due to []
1) Reflection of light 2) Bending of light 3) Refraction of light 4) Absorption of light
3. _____ is a grooved wheel with a cable around it. []
1) Screw 2) Lever 3) Pulley 4) Wedge
4. Shadows are formed due to []
1) Light always travel in straight line 2) Light always travel in curved line
3) Light sometimes travel in curved line 4) Light always travel in circular path
5. The simple machine which is used to lift a car just above the ground is []
1) Lever 2) Wheel and axial 3) Pulley 4) Screw jack
6. A third class lever has _____ in the middle []
1) Fulcrum 2) Load 3) Effort 4) All the above
7. It is easier to moves up an object over an _____ []
1) Horizontal plane 2) Vertical plane 3) Inclined plane 4) Circular plane
8. We are able to see the nature because of []
1) Heat energy 2) Sound energy 3) Light energy 4) All the above
9. Scissors is an example of _____ lever []
1) First class 2) Second class 3) Third class 4) None of these
10. The shadow of an object is formed on _____ side of the light source []
1) Same 2) Opposite 3) Upper 4) Down
11. Forceps is an example of _____ lever []
1) First class 2) Second class 3) Third class 4) None of these
12. The speed of light in vacuum is []
1) 3×10 m/s 2) 3×10^4 m/s 3) 3×10^8 m/s 4) 3×10^{10} m/s
13. A second class lever has _____ in the middle []
1) Fulcrum 2) Load 3) Effort 4) All the above
14. The objects which allow most of the light fall on them are called []
1) Transparent 2) Translucent 3) Opaque 4) All the above

15. Sun light reaches the earth by _____ minutes []
 1) $3\frac{1}{4}$ 2) $5\frac{1}{4}$ 3) $8\frac{1}{4}$ 4) $10\frac{1}{4}$
16. In lever of first order : []
 1) Effort is between load and fulcrum 2) Load is between effort and fulcrum
 3) Fulcrum is between effort and load 4) No fulcrum is present
17. Nut cracker is an example of _____ []
 1) First class lever 2) Second class lever 3) Third class lever 4) Wheel and axel

CHEMISTRY

18. Sanjana sits in a chair filled with air. She stick some pins into the chair. She observed that size of the chair was reduced. From this, she can conclude that []
 1) Air occupies space 2) Air is an example for solid
 3) Air has some shape 4) All the above
19. The density of water at 4° C is []
 1) 1 gm/ml 2) 0.5 gm/ml 3) 0.75gm/ml 4) 2 gm/ml

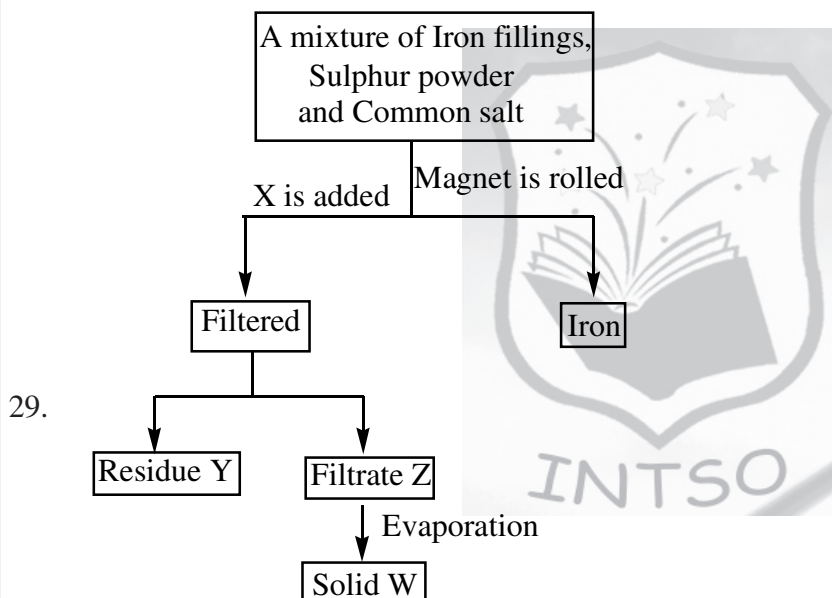


- Based on the above representation of arrangement of particles, try to match the X,Y,Z with the following (i) stone (ii) oxygen (iii) water
 1) X- water,Y - oxygen, Z- stone 2) X- stone,Y - water,Z - oxygen []
 3) X- oxygen, Y - water, Z- stone 4) X- stone, Y - oxygen, Z- water
21. The constituent elements of marble are []
 i) Calcium ii) Carbon iii) Hydrogen iv) Oxygen
 1) only i and ii 2) only ii and iii 3) only i,ii,iv 4) all are present
22. Water is a compound made up of two elements hydrogen and oxygen which chemically combine in a fixed ratio of 1:8 by mass . Then the mass ratio of Hydrogen and oxygen in H₂O₂ (Hydrogen peroxide) is []
 1) 1: 8 2) 2 : 32 3) 1 : 16 4) both 2 & 3
23. Which of the given processes involves the change of state from a liquid to a gas ? []
 1) Melting of an ice-cream 2) Formation of ice cubes in the freezer
 3) Drying of wet clothes hung outside 4) Dissolving of sugar in lemonade
24. Tanu made two groups of objects as shown in the given table select the correct option regarding the characteristics of these groups. []

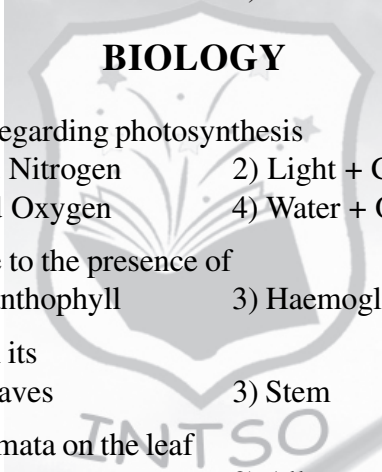
Grou P	Group Q
Wooden block	Glass cup
Plastic	Metal spoon

- 1) Group P objects are heavier than group Q objects
 2) Group P objects are harder than group Q objects
 3) Group P objects are able to float on water while group Q objects sink.
 4) Group P objects are natural materials while group Q objects sink.

25. Largest source of water is []
 1) Sea 2) Pond 3) River 4) Ocean
26. Which method of separation is used to separate tea leaves []
 1) Filtration 2) Winnowing 3) Decantation 4) Sedimentation
27. A mixture contains two solids P and Q, solid P is light in weight while solid Q is very heavy . Their sizes are almost same .Here 'P' is unwanted component . To get pure solid Q which separation method would you suggest? []
 1) Sieving 2) winnowing 3) hand picking 4) Filtration
28. Harini brought sand, saw dust and common salt for doing experiment in science lab . But unfortunately when she kept in bag the above three components mixed together and now she wants to separate them by using following methods
 i) Filtration ii) Evaporation iii) sedimentation and decantation
 iv) sieving v) Hand picking
 Suggest her the best combination of separation techniques []
 1) i,ii,iii 2) iii,iv,v 3) i,iv,v 4) all



- Then X,Y,W are** []
 1) X is sulphur Y is water , W is water
 2) X is water Y is Sulphur W is water
 3) X is water Y is Sulphur W is Common salt
 4) X is Iron Y is water W is Common salt
30. Choose the correct statements from the following []
 I) Husk is removed from grain by Hand picking
 II) Pure water is obtained from sea water by the combined process of decantation and filtration
 III) A liquid can be separated from a salt solution by the process of filtration.
 1) only I and II 2) only II and III 3) only I and III 4) all are incorrect
31. The substances which are made up of only one kind of atoms are called []
 1) compound 2) element 3) mixture 4) all

32. We know that metals are good conductors of heat and electricity . Three metals a,b,c are acting as good conductors of heat and electricity, teacher asked the student to study which metal can conduct heat and electricity effectively and arrange them in decreasing order of conductivity the performed a simple experiment by applying wax on the three metal rods and heated, and he felt that from which metal the wax drop off first is best conductor and then followed by remaining two.Finally he observed that from metal ‘a’ first wax drop off then metal ‘c’ and finally from ‘b’ . Then he arranged three metals in decreasing order of conductivity.Now Identify the correct order
1) $a > b > c$ 2) $a < b < c$ 3) $b < c < a$ 4) $a > c > b$ []
33. The given pictures show three objects that can be classified in the same group. Which of the following statements is true for all three of these objects - Aluminium sheet, Steel nail, Copper coin []
1) They are metals 2) They rust rapidly
3) They weigh the same 4) They are of same colour
34. A mixture of two miscible liquids A and B is given to you. Boiling point of one liquid ‘A’ is 100°C and the boiling point of liquid ‘B’ is 60°C .
Based on the above that, answer the following questions.
Which method is used to separate the two liquids A and B from the mixture []
1) Sieving 2) Filtration 3) Sedimentation 4) Distillation
- BIOLOGY**
- 
35. Identify the correct equation regarding photosynthesis []
1) $\text{Water} + \text{CO}_2 \rightarrow \text{Food and Nitrogen}$ 2) $\text{Light} + \text{CO}_2 \rightarrow \text{Food and Oxygen}$
3) $\text{Water} + \text{CO}_2 \rightarrow \text{Food and Oxygen}$ 4) $\text{Water} + \text{O}_2 \rightarrow \text{Food and Carbondioxide}$
36. Plants are green in colour due to the presence of []
1) Chlorophyll 2) Xanthophyll 3) Haemoglobin 4) Keratin
37. Potato plant stores the food in its []
1) Root 2) Leaves 3) Stem 4) Fruit
38. Identify the function(s) of stomata on the leaf []
1) Allows entry of Oxygen 2) Allows entry of Carbon di Oxide
3) Allows evaporation of water 4) All the above
39. Which of the following food component can be identified by iodine test []
1) Starch 2) Fat 3) Protein 4) All the above
40. What we can observe when we add iodine solution to potato paste []
1) It turns to blackish blue 2) It turns to pink colour
3) It turns to brown colour 4) It do not show any colour change
41. What happens when we boil leaf in alcohol []
1) Leaf turns to brown colour
2) Chlorophyll present in leaves dissolves in alcohol and make it to appear green
3) Leaf turn to bluish black
4) Leaf do not show any change in colour
42. Which of the following is incorrect []
1) Dodder plant do not have chlorophyll so they depend on other plants for food
2) Insectivorous plants do not have chlorophyll so they depend on insects for food
3) Plants can prepare their own food
4) Plants prepare the food in their leaves

43. Which of the following is incorrect []
- | | |
|------------------------|-------------------------------------|
| 1) Birds have feathers | 2) Birds have two legs and can walk |
| 3) Birds have beak | 4) Birds have external ears |
44. Food of humming bird is []
- | | | | |
|------------|-----------|----------|-----------|
| 1) Insects | 2) Fruits | 3) Seeds | 4) Nectar |
|------------|-----------|----------|-----------|
45. Strong, sharp and hooked beak is seen in []
- | | | | |
|-----------|----------------|-----------|--------|
| 1) Parrot | 2) King fisher | 3) Toucan | 4) Owl |
|-----------|----------------|-----------|--------|
46. Identify the bird which makes nest with twigs and leaves []
- | | | | |
|-----------|-----------|---------------|---------|
| 1) Beaver | 2) Bulbul | 3) Kingfisher | 4) Crow |
|-----------|-----------|---------------|---------|
47. Read the following about birds []
- I. It eats Rabbit and fish ; it is _____
- II. It can not fly; it is _____
- III. It lives in antarctic regions; it is _____
- IV. It lives close to water; it is _____.
- | |
|--|
| 1) a - Eagle, b - Ostrich, c - Penguin, d - Duck |
| 2) a - Owl, b - Ostrich, c - Penguin, d - Humming bird |
| 3) a - Eagle, b - Penguin, c - Ostrich, d - Crane |
| 4) a - Owl, b - Toucan, c - Pelican, d - Penguin |
48. Water that falls from sky is called []
- | | | | |
|-----------------|----------------|------------------|-------------|
| 1) Condensation | 2) Evaporation | 3) Precipitation | 4) Freezing |
|-----------------|----------------|------------------|-------------|
49. Cloud is a collection of []
- | | |
|---|----------------------------|
| 1) Frozen water | 2) Water vapour |
| 3) Tiny water droplets and ice crystals | 4) Large droplets of water |
50. Which of the following is formed due to the condensation of excess moisture in the air []
- | | | | |
|--------|---------|----------------|--------|
| 1) Dew | 2) Smog | 3) Snow flakes | 4) Fog |
|--------|---------|----------------|--------|

