



INTSO EDUCATION

SCIENCE TALENT SEARCH OLYMPIAD (STSO) 2016-17

STAGE - 1

TIME : 60 min.

CLASS : VIII

Max. Marks : 50

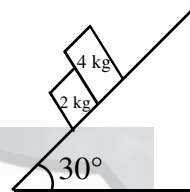
Instructions:

- ⇒ 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. In the figure shown, the wedge is smooth and fixed. The masses 4 kg and 2 kg are released from rest. The contact force between the masses is []

- 1) 2N
- 2) 4 N
- 3) zero
- 4) 6N

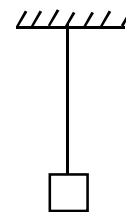


2. A cyclist pedals cycle for some time and then stops peddaling, then []
- 1) Frictional force on the back wheel is in the direction of motion and front wheel is opposite to the direction of motion
 - 2) Frictional force on the back wheel is opposite to the direction of motion and front wheel is in direction of motion
 - 3) Frictional force on the both the wheels are opposite to the direction of motion
 - 4) Frictional force on the both the wheels are in the direction of motion

3. Which of the properties of sound is not affected by change in the temperature of air []
- 1) Amplitude 2) Frequency 3) Wavelength 4) Intensity

4. A stone is suspended with the help of a thread and its free end is tied to the ceiling. What will happen if the thread is broken. []

- 1) Stone would fall down with constant speed
- 2) Stone would fall down with increasing acceleration
- 3) Stone would fall down with constant acceleration
- 4) Stone would fall down with decreasing speed



5. Which of the following forces is/are Non - contact forces []
- i) Frictional force ii) Gravitational force iii) Electro static force iv) Muscular force
 - 1) i, ii, iii 2) ii, iii 3) ii, iii, iv 4) ii

6. **Statement (A)** : Frictional force always opposes the motion. []

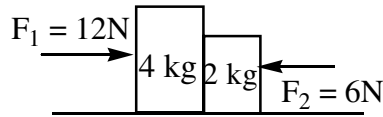
Statement(B) : A force can change the state of motion of an object.

- 1) Both A and B are true 2) Both A and B are false
- 3) A is true and B is false 4) A is false and B is true

7. The force of 100 dyne acting perpendicularly on the area of 10 cm², then the pressure is []
- 1) 10 N/m² 2) 1 N/m² 3) 100 N/m² 4) none

8. Find the contact force between the blocks for the following diagram(smooth surface) []

- 1) 2N
- 2) 8 N
- 3) 14 N
- 4) zero



9. If a man is walking on the road, the direction of friction is []

- 1) opposite to the direction of motion
- 2) same as that of direction of motion
- 3) perpendicular to that of direction of motion
- 4) inclined to the direction of motion.

10. Some common sounds and their decibel ratings are given below. Match the following two columns []

Column - I

- i) A car horn
- ii) Normal conversation
- iii) A gunshot
- iv) Near total silence

Column- II

- p) 140 dB
- q) 110 dB
- r) 60 dB
- s) 0 dB
- 2) i - r, ii - q, iii - p, iv - s
- 4) i - q, ii - r, iii - p, iv - s

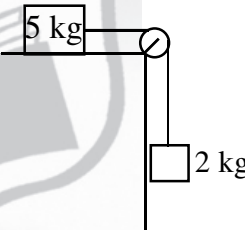
- 1) i - q, ii - p, iii - r, iv - s
- 3) i - r, ii - q, iii - s, iv - p

11. The brightest planet in the night sky is []

- 1) venus
- 2) mercury
- 3) mars
- 4) saturn

12. Two bodies of masses 5 kg and 1 kg are connected by a light and inextensible string, which passes over a friction less pulley. The surface on which 5 kg stationary is rough. Two blocks are in equilibrium. The frictional force acting in between 5 kg and surface is ($g = 10 \text{ m/s}^2$). []

- 1) Zero
- 2) 2N
- 3) 20 N
- 4) 50 N



13. A force produces an acceleration of 4 m/s^2 in a body and the same force produces an acceleration of 6 m/s^2 in another body. If the two bodies are combined and the same force is applied on the combination, the acceleration produce in it is []

- 1) 10 m/s^2
- 2) 2.4 m/s^2
- 3) 2 m/s^2
- 4) 5 m/s^2

14. Length of vocal card in men is nearly []

- 1) 20 mm
- 2) 5 mm
- 3) 15 mm
- 4) 30 mm

15. Day and nights are occuring due to []

- 1) Rotation of earth around its own axis
- 2) Revolution of earth around the sun
- 3) Rotation of sun around its own axis
- 4) Revolution of sun around earth

16. The star which is nearest to earth []

- 1) Alpha centauri
- 2) Moon
- 3) Sun
- 4) Polestar


17. Rain water is a _____ conductor of electricity []

- 1) good
- 2) bad
- 3) insulator
- 4) none of these

CHEMISTRY

18. The non metal which is used in matchsticks & antiseptic ointment is []
 1) Nitrogen 2) Phosphorus 3) Sulphur 4) Lead
19. A student X prepared pins by iron, silver & gold are dipped in a solution of copper sulphate. The pin that will get coated with copper is []
 1) Iron 2) Silver 3) Gold 4) None
20. Aquaregia is the mixture of _____ which is used in the purification of gold []
 1) 3 : 1 of conc. HCl & conc.HNO₃ 2) 1 : 1 of conc.HCl & conc. HNO₃
 3) 3 : 1 of conc.H₂SO₄ & conc.HNO₃ 4) 1 : 1 of conc.H₂SO₄ & conc.HNO₃
21. Ravi prepared five solutions and observed reactivity of metal in increasing order is []

Beakers	A	B	C	D	E
Solutions observation	CuSO ₄ + Zn Red colour coating	CuSO ₄ + Cu Blue colour	ZnSO ₄ + Cu No colour change	FeSO ₄ + Cu No colour change	ZnSO ₄ + Fe No colour change

- 1) Cu < Fe < Zn 2) Cu > Fe > Zn 3) Zn > Fe > Cu 4) Zn < Fe < Cu
22. Melamine is _____ polymer []
 1) Thermo plastic polymer 2) Thermo setting plastic polymer
 3) Fibre 4) Elastomer
23. We can separate Naphthalene and salt by _____ method. []
 1) Evaporation 2) Decantation 3) Sublimation 4) Sedimentation
24. In the purification of gold _____ is used []
 1) Aquaregia 2) conc.HNO₃ 3) conc.HCl 4) conc.H₂SO₄
25. Which metals are used for making fine, electrical contacts in computers and solar cells []
 1) Ca, Mg 2) Al, Zn 3) Au, Ag 4) Al, Ag
26. Most electropositive element in periodic table []
 1) K 2) Ca 3) Fr 4) Cs
27. Why certain clothes produce cracking sound or sparts in dark []
 1) Due to acquire static electricity 3) Due to thermal electricity
 2) Due to Hydral electricity 4) None of these
28. Chemical composition of nylon []
 1) Hexamethylene diamine & adipic acid 2) Tetramethylene diamine & adipic acid
 3) Tetramethylene amine & adipic acid 4) Heptamethylene adipic acid
29. Which fibre is used as artificial wool []
 1) Rayon 2) Cotton 3) Nylon 4) Acrylic
30. The symbol “  ” which indicates []
 1) Dry 2) Dont dry cleaning
 3) Dont wash with bleach 4) Not iron
31. Iron when comes into contact with the atmospheric moisture and oxygen it will rust. If this iron rust along with water is tested with litmus paper what do you observe ? []
 1) Blue colour litmus chages to Red litmus 2) Red colour litmus changes to Blue litmus
 3) Litmus colour is not effected 4) All

32. Stain less steel is an example of []
 1) Iron, Copper 2) Iron, Zinc
 3) Iron, Chromium and manganese 4) Copper, Carbon
33. Which metal doesn't give H₂ gas on reacting with H₂SO₄ at room temperature []
 1) Na 2) K 3) Cu 4) Mg
34. The mass of electron is []
 1) 9.11×10^{-28} g 2) 1.672×10^{-24} g 3) 1.675×10^{24} g 4) 1.675×10^{-27} kg

BIOLOGY

35. Science is an organised study of knowledge which is based on []
 1) Controlled conditions 2) Phenomena
 3) Experimentation 4) Observation
36. The microbial biomass obtained from micro organisms can be taken as a food supplement called Single Cell Proteins. Identify which among the following organisms can be used as single cell proteins []
 1) Bacteria, Fungi, Algae, Yeast 2) Bacteria, Fungi Yeast, Virus
 3) Yeast, Algae, Virus 4) Bacteria, Fungi, Virus
37. Identify the semi autonomous cell organelles of the cell []
 1) Chloroplast, Endoplasmic reticulum 2) Chloroplast, Mitochondria
 3) Nucleus, Mitochondria 4) Golgi complex, Endoplasmic reticulum
38. Students of VIII Class have done the following class activities.

Name of the student	Activity
1) Srinu	Taken the height and weight of his classmates
2) Seeta	Wrote about science tour
3) Gopi	Observing the possible reasons for sprouting of seeds in potted soil
4) Rani	Exhibited volcano in science exhibition

What are the process skills used by srinu, seeta, gopi, rani respectively

- 1) Measure, Predict, Record, Use a model 2) Measure, Record, Predict, Use a model
 3) Record, Measure, Predict, Use a model 4) Use a model, Record, Predict, Measure
39. Lactic Acid Bacteria grow in milk and convert it to curd and also improve its nutritional quality by increasing []
 1) Vitamin - A 2) Vitamin C and A 3) Vitamin - B₆ 4) Vitamin B₁₂
40. Which one of the following option gives the correct matching of a disease with its causative organism and mode of infection and that can be prevented by vaccine. []
- | Disease | Causative organism | Mode of infection |
|----------------|-----------------------------|-----------------------------|
| 1) Typhoid | <i>Streptococcus typhii</i> | House fly (vector) |
| 2) Malaria | <i>Plasmodium vivax</i> | Bite of male mosquitoes |
| 3) Mumps | <i>Myxovirus parotidis</i> | Contaminated food and water |
| 4) Chicken pox | <i>Varicella zoster</i> | Air borne |
41. Nucleus controls the activity of cytoplasm by sending []
 1) Enzymes 2) Hormones 3) RNA 4) DNA

42. Raju is observing some slides of cells under microscope which were labelled as follows
 1) Onion cell 2) Bacterial cell 3) Algal cell 4) Mycoplasma cell
 5) Fungi cell 6) Nerve cell
 Raju observed cell wall for which among the above labelled cells []
 1) 1, 2, 3, 5 2) 1, 3, 4, 5, 6 3) 1, 2, 3, 4 4) 1, 2, 3, 5, 6
43. Ravali thought cells are visible only through microscope but Ramya said some cells can be seen even with naked eye. Identify the largest isolated single cell []
 1) Ostrich egg 2) Mycoplasma 3) Human RBC 4) Nerve cell
44. Oral polio vaccine was discovered by []
 1) Y . Subbarao 2) Albert Sabin 3) Louis pasteur 4) Edward Jenner
45. Which of the following pair lack the unit membrane []
 1) Nucleus, endoplasmic reticulum, ribosome 2) Mitochondria, chloroplast, centriole
 3) Ribosome, nucleolus, centriole 4) Golgi body, lysosome, ribosome
46. Ramu conducted a survey on population growth for the last decade. Suggest him some good ways to display his interpretations []
 a) Graphs b) Tables c) Using model d) Charts
 1) a, b, c 2) b, c, d 3) a, c, d 4) a, b, d
47. Which of the following sets includes the bacterial disease []
 1) Cholera, Typhoid, Mumps 2) Malaria, Mumps, Poliomyelitis
 3) Tetanus, Tuberculosis, Measles 4) Plague, Leprosy, Diphtheria
48. Biology is a branch of science which deals with living organisms. Who coined the term biology, who is considered as father of biology respectively []
 1) Jean lamarck, Aristotle 2) Robert hook, Aristotle
 3) Aristotle, Aristotle 4) Linnaes, Aristotle
49. Study the following []
 i) The term antibiotic was coined by S.Waksman in 1942.
 ii) A compound which is produced by an organism and inhibits the growth of same organism is called antibiotic
 iii) The first antibiotic was discovered by Alexander flemming
 iv) Each antibiotic is effective only against one particular kind of microbe
 v) Some persons can be allergic to a particular antibiotic
 Identify the **incorrect** statements regarding antibiotics.
 1) i, ii, iv only 2) i, ii, iv, v only 3) ii, iv only 4) ii, iv, v only
50. Golgi body is concerned with []
 1) Respiration 2) Secretion 3) Excretion 4) Degradation

