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(SCHOLARS INTEGRAL MATHS &amp; SCIENCE OLYMPIADS)



## BIGGEST NATIONAL LEVEL OLYMPIADS (STAGE - II)

MAX. MARKS : 100

SISO QUESTION PAPER

TIME: 60 MIN.

NAME OF THE STUDENT : .....

HALL TICKET NUMBER : .....

NAME OF THE SCHOOL : .....

### INSTRUCTIONS TO THE STUDENTS :

- ☞ Write your Hall ticket number immediately after receiving the question paper booklet.
- ☞ Darken the answers only on the OMR Sheet.
- ☞ Read the instructions given on the OMR sheet and follow them accordingly.
- ☞ Don't write any thing on the question paper booklet.
- ☞ To do rough work, use only the white paper provided in the examination hall.
- ☞ **No negative marks.**
- ☞ This question paper booklet consists of 45 questions.
- ☞ **PHYSICS** (Q.No-1 to 15) :  
First 10 questions (1 to 10) are single correct answer type.  
Each question carries TWO marks.  
Next 5 questions (11 to 15) are one or more than one correct answer type.  
Each question carries THREE marks.
- ☞ **CHEMISTRY** (Q.No-16 to 30) :  
First 10 questions (16 to 25) are single correct answer type.  
Each question carries TWO marks.  
Next 5 questions (26 to 30) are one or more than one correct answer type.  
Each question carries THREE marks.
- ☞ **BIOLOGY** (Q.No-31 to 45) :  
All questions (31 to 45) are single correct answer type.  
Each question carries TWO marks.
- ☞ Students are not allowed to use any Mathematical and Physical tables (OR) any other electronic devices.
- ☞ After completion of the examination hand over the OMR answer sheet to the invigilator without fail. You can retain the question paper with you.
- ☞ Students should not leave the examination hall before the last bell rings.
- ☞ To know your results log in to our website **[www.simsolympiads.org](http://www.simsolympiads.org)** after 1<sup>st</sup> March-2017.
- ☞ Stage-I result copy will be sent to the school mail id. Please contact your branch principal to know your branch result.

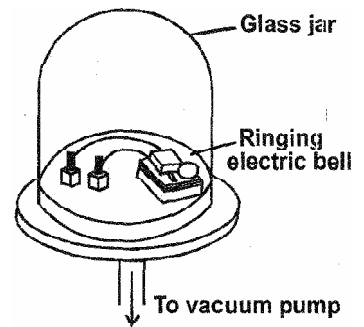
## CLASS : VIII

## PHYSICS

## Single Correct Answer Type :

 $10 \times 2 = 20M$ 

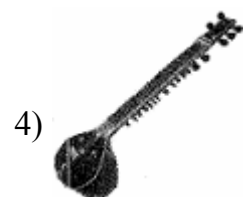
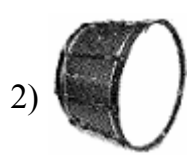
1. A scientist performed an experiment as shown in the figure here. What do you think happened as air was pumped out of the jar and he rang the bell?



- 1) The sound became louder
  - 2) The sound became fainter first and then louder once all the air was pumped out
  - 3) The sound could not be heard anymore
  - 4) The sound was the same as before
2. A sharp knife enable us to cut through things more easily because
- 1) The pressure exerted in lesser when the same force is used
  - 2) The pressure exerted is greater when the same force is used
  - 3) The sharp edge can pass through the material slowly
  - 4) The sharp edge is not felt when cutting through the material
3. When a body is moving on a surface, the force of friction is called
- 1) Static friction
  - 2) Dynamic friction
  - 3) Limiting friction
  - 4) Rolling friction
4. The below figures show the forces required to move a 100 g object over different surfaces. The friction is greatest at \_\_\_\_\_

Surface P	100 g	10 20 30 40 50 60
Surface Q	100 g	10 20 30 40 50 60
Surface R	100 g	10 20 30 40 50 60
Surface S	100 g	10 20 30 40 50 60

- 1) Surface P
  - 2) Surface Q
  - 3) Surface R
  - 4) Surface S
5. Most common industrial application of chemical effects of electric current is
- 1) Electroplating
  - 2) Electrolysis
  - 3) Anodising
  - 4) None of these
6. Lightning rods are made of
- 1) Copper
  - 2) Plastic
  - 3) Bakelite
  - 4) Sand paper
7. Observe the following musical instruments and select the odd one



8. The shaking of earth is called

- 1) Tsunami
- 2) Volcano
- 3) Earthquake
- 4) None of these

9. The smallest planet of the solar system is  
 1) Saturn                      2) Mars                      3) Venus                      4) Mercury
10. According to the chart, on which planet would a ball fall the fastest?

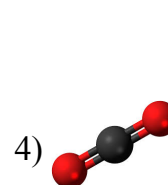
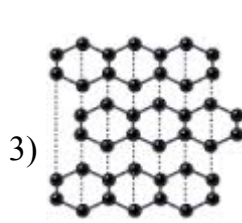
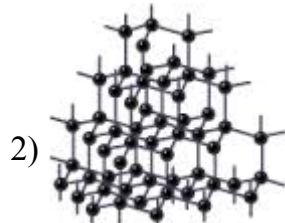
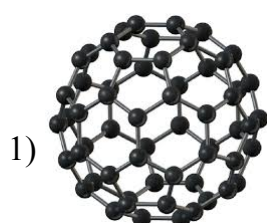
Planet	Earth	Jupiter	Neptune	Saturn
Acceleration Due to Gravity	10	26	14	12

- 1) Jupiter                      2) Saturn                      3) Neptune                      4) Earth

**Multi Correct Answer Type :****5 × 3 = 15M**

11. Which of the following materials can sound travel through?  
 1) Glass of water                      2) Balloon full of air  
 3) Iron bar                      4) Vacuum
12. Which of these things would you do if you live in the earthquake prone area?  
 1) You would keep an emergency kit always ready  
 2) You would have only open book shelves and open cupboards in your house  
 3) You would fix the cupboards to the walls  
 4) You would not keep breakable items on the upper shelves
13. We need energy to overcome friction. During friction, unwanted heat energy is produced. Frictions can be reduced by the use of \_\_\_\_\_  
 1) Rollers                      2) Gears                      3) Lubricants                      4) Ball bearing
14. Which of the following are the uses of electroplating?  
 1) Make objects appear shiny                      2) Prevent corrosion  
 3) Make objects resistant to scratches                      4) Supports corrosion
15. Which of the following statements is/are false regarding a cathode ?  
 1) Electrode connected to positive terminal of battery  
 2) Electrode connected to negative terminal of battery  
 3) A positively charged ion formed in the electrolyte  
 4) A negatively charged ion formed in the electrolyte

16. The diagram below shows the structures of four substances A, B, C and D.  
 Which of these substances can be used as a lubricant?



17. Which of the following produces an amphoteric oxide on heating?  
 1) Silver carbonate                      2) Sodium carbonate  
 3) Lead(II) carbonate                      4) Copper(II) carbonate

18. The nature of the following gases may be tested using litmus paper.  
 Sulphur dioxide      Ammonia      Nitrogen dioxide      Chlorine  
 For how many of the gases must damp litmus paper be used?  
 1) 4                      2) 3                      3) 2                      4) 1
19. The labels on three separate bottles of zinc powder, magnesium powder and iron powder have dropped off. Which of the following experiments will enable one to identify all three bottles of metals?  
 1) Heat some metal powder in air  
 2) Place some metal powder in dilute nitric acid  
 3) Place some metal in aqueous copper(II) sulphate  
 4) Weigh equal heap size of the metal powder
20. Strips of metal E were dipped into solutions of zinc nitrate and lead (II) nitrate. A metallic deposit appeared on both strips.  
 1) Potassium              2) Magnesium              3) Iron                      4) Copper
21. Which of the following is not a correct use for the petroleum fraction?
- | Fraction           | Use              |
|--------------------|------------------|
| 1) Naphtha         | Make drugs       |
| 2) Kerosene        | Fuel for cooking |
| 3) Diesel oil      | Make plastic     |
| 4) Lubricating oil | Make shoe polish |
22. Three experiments are carried out to determine the reactivity of three unknown halogens. The ionic equations of the three experiments are shown below.  
 $Z^{-} (aq) + Y_2 (aq) \rightarrow \text{no reaction}$   
 $X^{-} (aq) + Z_2 (aq) \rightarrow \text{no reaction}$   
 $2Y^{-} (aq) + X_2 (aq) \rightarrow 2X^{-} (aq) + Y_2 (aq)$   
 Predicate the reactivity of the halogens in decreasing order.  
 1) X, Y, Z                      2) X, Z, Y                      3) Z, Y, X                      4) Z, X, Y
23. Now a days we are using plastic bags for many purposes. What is the best method to avoid pollution caused by these plastic bags?  
 1) Burn the plastic bags in a rubbish dump  
 2) Use biodegradable plastic bags  
 3) Bury the plastic bags in the soil  
 4) Through the plastic bags into the river
24. Geetha took two pieces of a metal 'M' and she kept one in water and the other one in steam. She noticed that the metal piece kept in water reacting very slowly whereas, the piece kept in steam reacting vigorously. What is that metal M?  
 1) Gold                      2) Sodium                      3) Silver                      4) Magnesium

25. Statement - I : In case of oil fires, water cannot be used to extinguish fire.

Statement - II : Density of water is less than that of oil.

- 1) Statement I & II both are true
- 2) Statement I is true but statement-II is false
- 3) Statement-I is false but statement-I is true
- 4) Statement I & II both are false

**Multi Correct Answer Type :**

**5 × 3 = 15M**

26. Here are electronic configurations of some elements

Element	Configuration
A	2, 8, 1
B	2, 7
C	2, 8, 8, 2
D	2, 8, 5

Identify the correct categorization of the above elements.

- 1) A & C are metals
  - 2) B & D are non-metals
  - 3) A & C form anions
  - 4) B & D form cations
27. Find the properties of nylon, because of which it is made most convenient to use.
- 1) It is strong
  - 2) It is elastic
  - 3) It is light
  - 4) It is expensive
28. The compounds evolved into atmospheric air when fuels are burnt, which are responsible for green house effect are:
- 1) NO<sub>2</sub>
  - 2) H<sub>2</sub>O(vapour)
  - 3) CO<sub>2</sub>
  - 4) K<sub>2</sub>O
29.  $\text{NaOH} + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{O}$  What kind of reaction is this?
- 1) Double displacement reaction
  - 2) Precipitation reaction
  - 3) Double decomposition reaction
  - 4) Neutralisation reaction
30. Which of the following are periodic changes?
- 1) Occurrence of day and night
  - 2) Appearance of rainbow
  - 3) Occurrence of earthquake
  - 4) Blinking of eyes

**Single Correct Answer Type :**

**15 × 2 = 30M**

31. Compare the two organisms below ?

Which of the following statements is WRONG ?

- i) Both reproduce by spores.
- ii) Both do not produce flowers.
- iii) Both cannot make their own food.
- iv) Both cannot move from one place to another on their own.

- 1) (i) & (ii)
- 2) (i), (ii) & (iii)
- 3) (iii) only
- 4) (iii) & (iv)



Mushroom

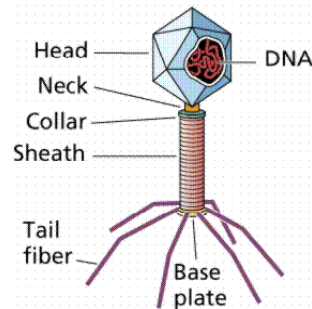


Fern

32. In a biology lecture, the teacher is dictating the organelles of a cell, which are endoplasmic reticulum, mitochondria, nucleus, ribosomes, centriole and centrosome. Which type of cell is she referring ?

- 1) Prokaryotic cell
- 2) Plant cell
- 3) Animal cell
- 4) It is not possible to predict from the given data

33. Observe the microorganism shown in the figure below carefully. Identify it and choose its correctly matched characteristic from the codes below :



Organism	Characteristic
A. Bacteriophage	i. Phase in the life cycle of bacteria
B. TMV	ii. It eats other bacteria
C. Polio virus	iii. Virus that uses bacteria as a host
D. Herpes virus	iv. Can live independently

- 1) A & (iii)
- 2) B & (i)
- 3) C & (ii)
- 4) D & (iv)

34. Match the following and select the **CORRECT** option.

Column - I

- a) Food poisoning
- b) Pneumonia
- c) Cholera
- d) Malaria
- e) Typhoid

1) a - s , b - p , c - q , d - t , e - r

3) a - r , b - t , c - s , d - p , e - q

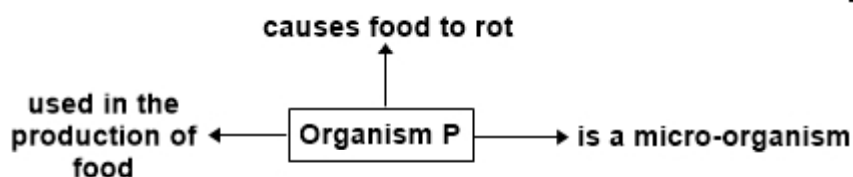
Column - II

- p) Vibrio cholera
- q) Salmonella typhi
- r) Diplococcus Pneumonia
- s) Clostridium botulinum
- t) Plasmodium vivox

2) a - s , b - r , c - p , d - t , e - q

4) a - q , b - s , c - t , d - r , e - p

35. Nithin made some observations about organism P and recorded his observations in the chart as shown below.



Which of the following could represent organism 'P' ?

- i) Yeast and bacteria
- ii) Yeast and toadstool
- iii) Bracket fungus and mould
- iv) Bracket fungus and bacteria

- 1) (i) & (ii)
- 2) (i), (ii) & (iii)
- 3) (i) only
- 4) (iii) & (iv)

36. A person goes through the following stages of growth. Which is the CORRECT sequence?

i) Foetus

ii) Zygote

iii) Embryo

iv) Baby

v) Adult

vi) Adolescent

vii) Child

1) (ii)-(iii)-(i)-(iv)-(vii)-(vi)-(v)

2) (i)-(ii)-(iii)-(iv)-(v)-(vi)-(vii)

3) (ii)-(iii)-(iv)-(i)-(vii)-(v)-(vi)

4) (i)-(iii)-(ii)-(iv)-(vii)-(vi)-(v)

37. Which one of the following statements best describes the similarity between fungi and bacteria?

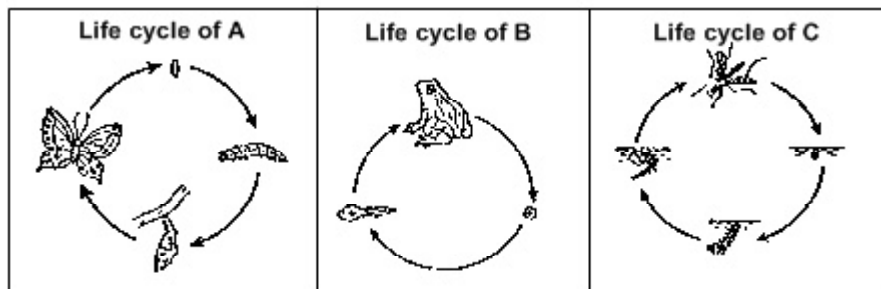
1) They can make their own food.

2) They need air, food and water to survive.

3) They can be seen only with the help of a microscope.

4) They are able to move from place to place by themselves.

38. Ravi studied the life cycles of three different types of organisms, A, B and C, and drew the following diagrams as shown below.



Which one of the following statements about the life cycles of these organisms is TRUE ?

i) All the organisms A, B and C have the egg stage.

ii) Only organisms A and C have larva and pupal stages.

iii) At least one stage in each of the life cycles of organisms A, B and C takes place in water.

iv) The number of stages in the life cycles of organisms A and C is the same unlike that of B.

1) (i) &amp; (ii)

2) (i), (ii) &amp; (iv)

3) (iii) only

4) (iii) &amp; (iv)

39. Match the following and select the CORRECT option.

Column - I

a) Breaking crubs

b) Harvesting

c) Tilling

d) Sowing seeds

e) Digging soil

Column - II

p) Drill

q) Spade

r) Khurpa

s) Plough

t) Soil plank

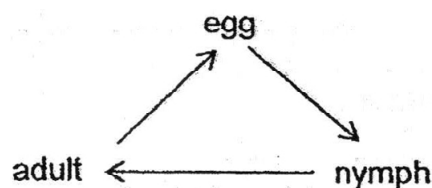
1) a - s, b - p, c - q, d - t, e - r

2) a - r, b - t, c - s, d - p, e - q

3) a - t, b - r, c - s, d - p, e - q

4) a - q, b - s, c - t, d - r, e - p

40. Which of the following statements is/are TRUE ?
- 1) Acid rain is the effect of water pollution.
  - 2) Greenhouse effect is essential for our survival on Earth.
  - 3) Water is safe to drink as long as it is clear and looks clean.
  - 4) The hole in the ozone layer is the main cause of global warming.
41. What are the benefits of the development of Science and Technology as a result of Man's interaction with the environment?
- i) We have food of better quality.
  - ii) The Earth becomes warmer due to the increasing greenhouse effect.
  - iii) We can communicate with people over long distance quickly and clearly.
  - iv) We have man-made materials such as alloys and plastics to meet our needs.
- 1) (i) & (ii)                      2) (ii) & (iii)                      3) (i), (iii) & (iv)                      4) (i), (ii), (iii) & (iv)
42. Which of these organisms reproduce in the same way as 'Yeast' ?
- 1) Hydra                      2) Amoeba                      3) Flatworm                      4) Starfish
43. Study the life cycle shown below.



Which of the following animals go through the life cycle as show above?

- i) Chicken                      ii) Butterfly                      iii) Cockroach                      iv) Mealworm beetle
  - 1) (iii) only                      2) Both (i) & (iii)                      3) Both (ii) & (iv)                      4) (ii), (iii) & (iv)
44. Which of the following NOT belong to the group formed by the others ?
- 1) Poliomyelitis                      2) Mumps                      3) Rabies                      4) Typhoid
45. What is the main aim of conserving living organisms ?
- 1) To increase the world's population of organisms
  - 2) To prevent the extinction of endangered species
  - 3) To help the students of botany and zoology
  - 4) To help in ecotourism

✿✿✿ **ALL THE BEST** ✿✿✿