

Name.....

Batch..... Roll No. ....

# BRILLIANT SCIENCE OLYMPIAD

## MOCK TEST

PHYSICS + CHEMISTRY + BIOLOGY + MATHEMATICS

Class: VI

### PHYSICS

1. The motion of the planets around the sun is  
A) Oscillatory.                      (a) Linear                      (b) Circular                      (c) None of these
2. One metre square is equal to  
A) 10000 centimetre square                      B) 100,000 centimetre square  
C) 100 centimetre square                      D) 10 centimetre square
3. While measuring the length of a needle, the reading of the scale at one end is 2cm and at the other end is 30cm what is the length of the needle.  
A) 27cm                      B) 26cm                      C) 28cm                      D) 31cm
4. Which of the following is a luminous object  
A) Mirror                      B) Moon                      C) Sun                      D) Book
5. What type of object partially allows light to pass through  
A) Transparent                      B) opaque                      C) Translucent                      D) Reflective
6. The law of reflection says that (  $i$  = incident angle,  $r$  = reflected angle)  
A)  $i > r$                       B)  $i = r$                       C)  $i \neq r$                       D)  $i < r$
7. In a rotating fan the electrical energy is converted into  
A) Light energy                      B) Mechanical energy                      C) Chemical energy                      D) None of these
8. Aluminium is a/an  
A) Semiconductor                      B) Insulator                      C) Conductor                      D) None of these
9. Electricity is the flow of  
A) Light rays                      B) Load                      C) Insulators                      D) Charge
10. Magnets lose their magnetic properties when they are:  
A) Kept near water                      B) Heated, hammered or dropped  
C) Kept in air                      D) Painted

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11. Which of these can be used to detect the presence of a magnetic field?  
A) Torch                      B) Compass                      C) Battery                      D) Mirror
12. The region around a magnet where its force can be felt is called:  
A) Magnetic axis              B) Magnetic field              C) Magnetic pole              D) Magnetic zone
13. Which of the following statements are correct?  
(i) Venus is the most closest planet to the sun among solar system  
(ii) Venus is the hottest planet in the solar system  
(iii) The nuclear fission reactions takes place in the core of sun  
(iv) The sun is mostly made up of hydrogen gas which is continuously changing to helium  
A) (i) only                      B) (ii) ,(iii) and (iv)              C) (ii) and (iv)                      D) (iii) and (iv)
14. Tides in Earth are caused due to the gravitational pull of  
A) Mars                      B) Mercury                      C) Moon                      D) Phobos
15. Indian name of jupiter is  
A) Manghal                      B) Brihaspati                      C) Prithvi                      D) Arun

### **CHEMISTRY**

16. A small amount of potassium permanganate is dropped into one end of a long glass tube filled with still water. After a few hours, the entire tube becomes uniformly purple, even though the water was not stirred. Which property of matter does this experiment mainly demonstrate?  
A) Particles of matter have definite boundaries  
B) Particles of matter attract each other strongly  
C) Particles of matter are always in motion  
D) Water expands when a solute dissolves
17. A student notices that after adding alum to muddy water and stirring, the mud settles much faster. This process is called:  
A) Distillation                      B) Sedimentation  
C) Decantation                      D) Coagulation

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18. Even after filtration, tap water may remain slightly cloudy in some places. Which property explains why tiny particles might still pass through filter paper?
- A) They are larger than filter holes
  - B) They are particles of a true solution
  - C) They are colloidal particles
  - D) They are salts dissolved in water
19. Which mixture does not produce a temperature change when its components are mixed?
- A) Quicklime and water
  - B) Sugar and water
  - C) Ammonium chloride and water
  - D) Concentrated acid and water
20. When fog forms, which is the correct classification and reason?
- A) Fog is a suspension because particles settle down
  - B) Fog is a colloid because water droplets stay suspended in air
  - C) Fog is a solution because it is clear
  - D) Fog is a mixture of two solids
21. Which best describes what happens if petrol is poured into water?
- A) Petrol dissolves in water
  - B) Petrol sinks to the bottom
  - C) Petrol forms a layer on top of water
  - D) Petrol reacts chemically with water
22. While separating cream from milk, which physical property is used?
- A) Boiling point
  - B) Magnetism
  - C) Density
  - D) Conductivity
23. A mixture is poured through a special filter that allows dissolved ions to pass but not even the smallest suspended colloidal particles. What is this process called?
- A) Filtration
  - B) Evaporation
  - C) Centrifugation
  - D) Ultrafiltration
24. Which of these best describes the change occurring when iodine crystals kept in a closed jar slowly disappear and form a purple vapour?
- A) Condensation
  - B) Melting
  - C) Sublimation
  - D) Evaporation

25. What is a good reason why air is considered a homogeneous mixture, even though it contains both gases and small liquid water droplets (humidity)?
- A) The gases do not mix at all                      B) All substances in air are elements only
- C) Water is always present as a separate liquid in air
- D) The gases and water vapour are mixed so well, the composition is uniform throughout
26. A closed glass bottle half-filled with water is left in the sun. After an hour, tiny droplets appear on the inner surface near the cap. Which sequence explains this best?
- A) Evaporation of water → condensation of vapour on cooler glass near cap
- B) Melting of water → freezing near cap
- C) Sublimation of water → deposition on glass
- D) Boiling of water → precipitation on glass
27. A student stirs equal spoonfuls of salt into two beakers: one with cold water and one with warm water. The warm water dissolves more salt. Which factor mainly increases solubility here?
- A) Increased surface area of solute                      B) Increased temperature of solvent
- C) Decreased density of water                      D) Increased atmospheric pressure
28. A muddy river sample is spun rapidly in a centrifuge. What change improves separation compared with normal settling?
- A) Particles become smaller                      B) Gravitational effect is effectively increased
- C) Water becomes less dense                      D) Particles become magnetic
29. A transparent mixture looks clear but strongly scatters a beam of flashlight in a dark room. What is the best classification?
- A) True solution                      B) Suspension                      C) Colloid                      D) Pure solvent
30. A mixture contains kerosene, water, and small sand grains. Which single apparatus-based method can separate kerosene quickly from the rest?
- A) Evaporating dish                      B) Separating funnel                      C) Magnet                      D) Sieve

### **BIOLOGY**

31. Which part of the cell helps in packaging and transport of proteins ?
- A) Golgi apparatus                      B) Mitochondria                      C) Lysosome                      D) Nucleus

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32. Which vitamin is destroyed when food is cooked at high temperature ?  
A) Vitamin A                      B) Vitamin C                      C) vitamin D                      D) Vitamin E
33. Which component of food gives instant energy ?  
A) Fats                              B) Proteins                      C) Vitamins                      D) Glucose
34. Which of these features differentiates fungi from plants ?  
A) Presence of chlorophyll                      B) Multicellular body  
C) Cell wall made of cellulose                      D) Cell wall made of chitin
35. Invertebrates differ from vertebrates in that they  
A) are always microscopic                      B) Have no backbone  
C) Cannot move                      D) All are aquatic
36. Mature ovary of a flower develops into \_\_\_\_\_ and ovules become \_\_\_\_\_  
A) Seed, fruit                      B) Fruit, seed                      C) Fruit, flower                      D) Seed, embryo
37. Yeast reproduce by  
A) Fragmentation                      B) Budding                      C) Spore formation                      D) Binary fission
38. Which structure protects the developing embryo inside the seed ?  
A) Seed coat                      B) Ovary wall                      C) Anther                      D) Stigma
39. Why do many plants in dry, hot climates have reduced leaf surface area or spines ?  
A) To absorb more sunlight for photosynthesis    B) To reduce water loss by transpiration  
C) To increase the surface area for gaseous exchange  
D) To make them more attractive to pollinators
40. Camouflage helps in survival by  
A) making an animal more visible for mating purpose  
B) Hiding it from predators or prey by matching surroundings  
C) Reflecting sunlight to avoid overheating  
D) Absorbing more heat in cold climates

41. Which of the following is a correct pair of cell type and its example ?
- A) Unicellular - Human
  - B) Multicellular - amoeba
  - C) Unicellular - Bacteria
  - D) Tissue - virus
42. What happens when food is spoiled and consumed
- A) It becomes more nutritious
  - B) It may cause food poisoning or illness
  - C) It tastes better
  - D) It gives more energy
43. Which animal shows behavioral adaptation by being active during night to avoid heat ?
- A) Camel
  - B) Owl
  - C) Elephant
  - D) Lion
44. The large ears of a desert fox help it to
- A) Hear better
  - B) Release excess heat
  - C) Dig burrows
  - D) Attract Mates
45. Which of the following is not found in a typical plant cell ?
- A) Chloroplast
  - B) Cell wall
  - C) Lysosome
  - D) Large central vacuole

### **MATHEMATICS**

46. A shopkeeper had ₹74,382.475 in his account. He withdrew ₹28,957.846 for purchasing goods and then deposited ₹12,500.50 from sales. How much money is in his account now?
- A) ₹57,925.129
  - B) ₹57,926.219
  - C) ₹57,927.319
  - D) ₹57,928.419
47. The average marks of 4 students is 72. If three of them scored 65, 70, and 75, find the marks of the fourth.
- A) 74
  - B) 76
  - C) 78
  - D) 80
48. In a cube, how many edges are there?
- A) 8
  - B) 10
  - C) 12
  - D) 14

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49. A man earns ₹2400 per month. If he spends  $\frac{3}{5}$  of it, how much does he save?
- A) ₹920                      B) ₹940                      C) ₹960                      D) ₹980
50. After a 25% discount a shirt costs ₹150. What was the original price?
- A) ₹180                      B) ₹190                      C) ₹200                      D) ₹210
51. The measure of each angle in an equilateral triangle is:
- A)  $45^\circ$                       B)  $60^\circ$                       C)  $75^\circ$                       D)  $90^\circ$
52. A train travels 238.45 km in 4.75 hours. If it maintains the same speed, how far will it travel in 7.2 hours?
- A) 361.42 km                      B) 361.43 km                      C) 361.44 km                      D) 361.45 km
53. A rectangular field is 12.048 m long and 9.347 m wide. If it is to be completely fenced with 4 rounds of rope, how much rope is needed?
- A) 171.36 m                      B) 171.38 m                      C) 171.40 m                      D) 171.16 m
54. A water tank contains 9854.368 liters of water. If water is used at a constant rate of 6.27 liters per minute, how many minutes will it take to empty the tank?
- A) 1571 minutes                      B) 1572 minutes                      C) 1573 minutes                      D) 1574 minutes
55. Which polygon has all sides equal and all angles equal but is not a square?
- A) Rectangle                      B) Rhombus                      C) Regular hexagon                      D) Parallelogram
56. A plot of land has an area of  $18,735.46 \text{ m}^2$ . If the width is 53.28 m, find its length.
- A) 351.45 m                      B) 351.55 m                      C) 351.64 m                      D) 351.75 m
57. Convert  $\frac{13}{40}$  to a decimal.
- A) 0.325                      B) 0.33                      C) 0.34                      D) 0.35
58. The interior angle of a regular pentagon is:
- A)  $90^\circ$                       B)  $100^\circ$                       C)  $108^\circ$                       D)  $120^\circ$
59. A car uses 7.326 liters of fuel to travel 256.48 km. How far can it travel using 20 liters of fuel?
- a) 699.90 km                      b) 700.01 km                      c) 700.19 km                      d) 700.22 km
60. A straight angle measures:
- A)  $90^\circ$                       B)  $120^\circ$                       C)  $150^\circ$                       D)  $180^\circ$

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## MOCK TEST

|  | P + C + B + M - KEY | Class : VI |
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### PHYSICS

1. B
2. A
3. C
4. C
5. C
6. B
7. B
8. C
9. D
10. B
11. B
12. B
13. C
14. C
15. B

### CHEMISTRY

16. C
17. D
18. C
19. B
20. B
21. C
22. C
23. D
24. C
25. D
26. A
27. B
28. B
29. C
30. B

### BIOLOGY

31. A
32. B
33. D
34. D
35. B
36. B
37. B
38. A
39. B
40. B
41. C
42. B
43. B
44. B
45. C

### MATHEMATICS

46. A
47. C
48. C
49. C
50. C
51. B
52. C
53. D
54. B
55. C
56. C
57. A
58. C
59. D
60. D