

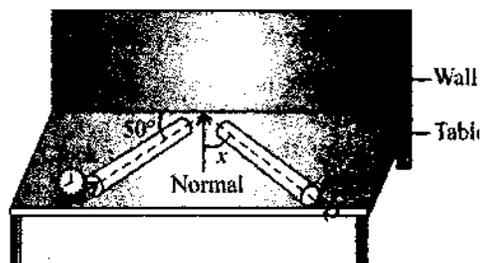
**BASANT'S SCIENCE ACADEMY**  
**MOCK TEST 2010-2011**  
**SUBJECT-GENERAL SCIENCE**  
**STD-IX**

**TIME-3Hrs**

**MAX MARK-80**

**SECTION A**

1. What should be the angle between the force applied and displacement to get maximum work? [1]
2. When clouds cool down, water droplets fall to the land as rain, hail or snow. Name the phenomenon. [1]
3. Give one example of a moving body, where no work is done. [1]
4. What is strip cropping? [1]
5. A gold sample contains 90% of gold and the rest copper. How many atoms of gold are present in one gram of this sample of gold? [Au = 197] [2]
6. An atom has mass number 40 and atomic number 20. [2]
  - (i) How many electrons are revolving around the nucleus?
  - (ii) How many electron shells are there in the atom?
7. (a) What is the basis of classification of animals? [2]
  - (b) Which animal shows bilateral symmetry?
8. Distinguish between bryophyta and pteridophyta. [2]
9. State Archimedes principle. What is the unit of relative density? [2]
10. Why are cutting instruments often sharpened? [2]
11. Draw a diagram representing longitudinal wave. [2]
12. Why does the percentage of gases like oxygen, nitrogen and carbon dioxide remain almost the same in the atmosphere? [2]
13. Why do lichens not occur in Delhi whereas they commonly grow in Manali or Darjeeling? [2]
14. Cinnabar (HgS) is a prominent ore of mercury. How many grams of mercury are present in 225 g of pure HgS? Molar mass of Hg and S are  $200.6 \text{ g mol}^{-1}$  and  $32 \text{ g mol}^{-1}$  respectively. [3]
15. Name all the elements present in the following compounds. [3]
  - (i) Lead nitrate (ii) Ammonium phosphate (iii) Magnesium hydrogen carbonate
16. Classify the following based on number of chambers in their heart. [3]  
 Rohu, *Scoliodon*, Frog, Salamander, Flying lizard, King Cobra, Crocodile, Ostrich, Pigeon, Bat, Whale.
17. Give two symptoms of each of the following diseases : [3]
  - (a) Malaria (b) Marasmus (c) Typhoid
18. Give reasons for the following : [3]
  - (a) If a person had small pox once, there is no chance that he/she will suffer from it again.
  - (b) A person suffering from HIV-AIDS may die due to minor cold or gut infection.
  - (c) Health is a state of being well physically, mentally and socially.
19. (a) What are antibodies? (b) How do antibodies work? (c) How is penicillin effective in controlling bacterial diseases?
20. A mass of 10 kg is dropped from a height of 50 cm. Find : (a) kinetic energy, and (b) velocity, just as it reaches the ground. Does the velocity depend on the mass of the particle? Explain. [3]
21. (i) If any explosion takes place at the bottom of a lake, what type of shock waves will take place in water? [3]



- (ii) Sound produced by a thunderstorm is heard 10 s after the lightning is seen. Calculate the approximate distance of the thunder cloud. (Given speed of sound =  $340 \text{ ms}^{-1}$ .)  
 (iii) For hearing the loudest ticking sound heard by the ear, find the angle  $x$  in the figure.
22. A ship sends out ultrasound that returns from the sea bed and is detected after 3.42 s. If the speed of ultrasound through sea water is  $1531 \text{ ms}^{-1}$ , what is the distance of the sea bed from the ship? [3]
23. An atom of an element contains 9 protons and 10 neutrons. [5]  
 (i) What is the atomic number of the element?  
 (ii) What is the mass number of the element?  
 (iii) Write the electronic configuration of the element.  
 (iv) Identify the element.  
 (v) Represent the ion formed by the element geometrically.

**OR**

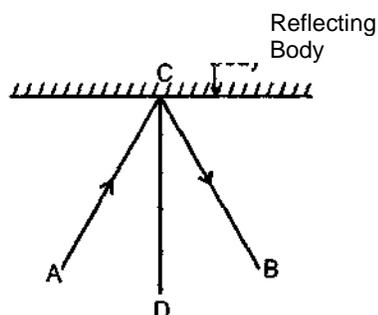
- Describe the essential features of the model of an atom proposed by Rutherford. How is it different from that proposed by J. J. Thomson? [5]
24. (a) An object thrown at a certain angle to the ground moves in a curved path and falls back to the ground. The initial and the final points of the path of the object lie on the same horizontal line. What is the work done by the force of gravity on the object?  
 (b) Define average power.
- OR**
- (i) Distinguish between work, energy and power. State the SI units for each of these quantities. [5]  
 (ii) A dog of mass 16 kg is running at a constant speed of  $12 \text{ ms}^{-1}$ . Calculate the kinetic energy of the dog.
25. A motor car, with its glass totally closed, is parked directly under the sun. [5]  
 The inside temperature of the car rises very high. Explain why?

**OR**

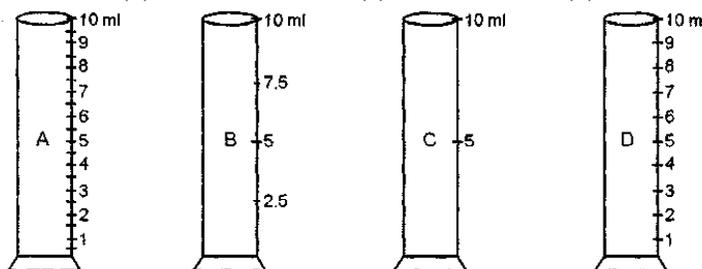
- (i) Soil formation is done by both abiotic and biotic factors. List the names of these factors by classifying them as abiotic and biotic? [5]  
 (ii) Explain the role of the Sun in the formation of soil.

**SECTION B**

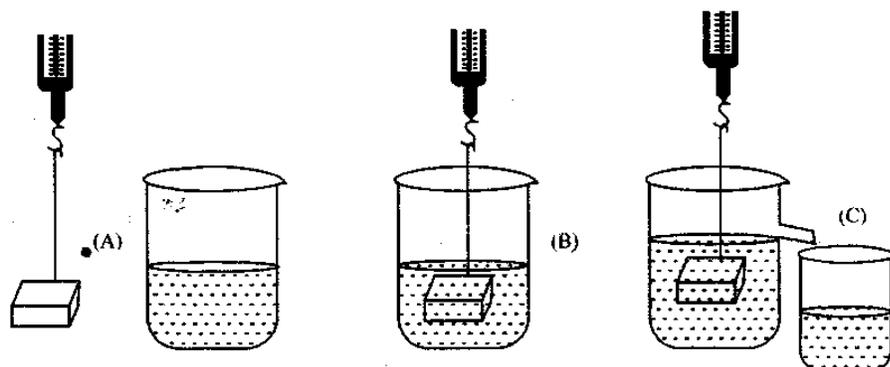
26. In the figure,  $\angle ACB$  is  $54^\circ$ . The angle of incidence is : [1]  
 (a)  $54^\circ$                       (b)  $44^\circ$                       (c)  $27^\circ$                       (d)  $22^\circ$ .



27. In the experiment of verification of reflection of sound, the incident sound is directed: [1]  
 (a) along the axis of the tube (b) along the normal to the axis of the tube  
 (c) at an angle of  $30^\circ$  from the axis of the tube (d) at an angle of  $45^\circ$  from the axis of the tube
28. Four measuring cylinders with different least counts are shown in figures A, B, C and D. The most suitable cylinder for determining the volume of a cube of side nearly 1 cm is : [1]  
 (a) B (b) A (c) D (d) C



29. While determining the density of the material of a sphere, using a spring balance and measuring cylinder, a student noted the following readings : [1]  
 (i) Mass of the sphere = 81 g  
 (ii) Reading of water level in the cylinder without sphere in it = 54 ml  
 (iii) Reading of water level in the cylinder with sphere in it = 63 ml  
 On the basis of these observations, the density of the material of the sphere is  
 (a)  $1500 \text{ kg/m}^3$  (b)  $6000 \text{ kg/m}^3$  (c)  $7000 \text{ kg/m}^3$  (d)  $9000 \text{ kg/m}^3$
30. A block of ice floats in water such that the temperature of water as well as ice is  $0^\circ\text{C}$ . In this situation, the weight of ice is equal to the: [1]  
 (a) Weight of water displaced by the immersed part of ice  
 (b) Volume of water displaced by the immersed part of ice  
 (c) Weight of water displaced by the complete block of ice  
 (d) None of these.
31. The readings of the spring balance will be : [1]  
 (a) Equal to each other in all cases A, B and C  
 (b) Equal to each other in cases B and C only  
 (c) Equal to each other in cases A and C only  
 (d) Different in every case.



32. Pressure exerted on a body will \_\_\_\_\_ with the increase of thrust. [1]  
 (a) Decrease (b) increase  
 (c) Remain the same (d) first increase and then decrease
33. Three cuboids A, B and C of weights 100 N, 200 N and 1000 N, have surface areas  $2\text{m}^2$ ,  $2\text{m}^2$  and  $10\text{m}^2$  respectively. The cuboids which exert the same pressure are: [1]  
 (a) A and B (b) B and C (c) A and C (d) A, B and C
34. A weight suspended from a rubber band is pulled downward and then released. The wave produced in the rubber band is : [1]  
 (a) pulse (b) longitudinal wave  
 (c) transverse wave (d) electromagnetic wave.
35. A pulse was created in a slinky/string of length 4 m by a group of students. They observed that it returned, after reflection, at the point of creation 6 times in 10 seconds and calculated the speed as follows : [1]

Students	A	B	C	D
Speed m/s	0.4	2.4	4.8	9.6

The correct speed was calculated by **the student** :

- (a) A (b) B (c) C (d) D
36. A student wants to prepare a temporary mount of *Spirogyra*. Where should he search for a fresh specimen? [1]  
 (a) In a pond of salty water (b) In a pond of stagnant dirty water  
 (c) In a stream of running fresh water (d) In a stream of running salty water
37. The sporophylls of a fern develop as : [1]  
 (a) roots (b) stems (c) rhizoids (d) leaves
38. Carpels of angiosperms are equivalent to : [1]  
 (a) sporophyll (b) sporangia (c) spore (d) zygospore
39. Birds have feathers. Feathers are modified derivatives of : [1]  
 (a) glands (b) skin (c) scales (d) blood vessels
40. Which of the following is a chordate characteristic? [1]  
 (a) Notochord (b) Hollow dorsal nerve chord  
 (c) Gill slits (d) All of these
41. The structure associated with earthworm, cockroach, bony fish and birds are given below in a series. Choose the correct series: [1]

- (a) Pneumatic bones, gills, chitinous plates, metamers  
 (b) Gills, metameres, chitinous plates, pneumatic bones  
 (c) Metameres, gills, chitinous plates, pneumatic bones  
 (d) Metameres, chitinous plates, gills, pneumatic bones

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 For Summative Assessment-2 (Term-II)

S. No.	Form of Questions	VSA (1)	SA(I) (2)	SA(II) (3)	LA (5)	MCQ (1)	Total
1.	<b>UNIT</b> <b>Matter – Its nature and behaviour</b> (a) Atoms and Molecules (b) Structure of atom	–	2(1)	6(2)	–	–	} 15(5)
		–	2(1)	–	5(1)	–	
2.	<b>Organisation in the living World</b> (a) Diversity in living organisms (b) Why do we fall ill	–	4(2)	3(1)	–	6(6)	} 22(12)
		–	–	9(3)	–	–	
3.	<b>Motion, Force and Work</b> (a) Floatation (b) Work, energy and power (c) Sound	–	4(2)	–	–	6(6)	} 32(19)
		2(2)	–	3(1)	5(1)	–	
		–	2(1)	6(2)	–	4(4)	
4.	<b>Our environment</b> (a) Water, air, ozone layer (b) Mineral riches in soil biogeochemical cycles in nature, greenhouse effect.	1(1)	4(2)	–	–	–	} 11(5)
		1(1)	–	–	5(1)	–	
		4(4)	18(9)	27(9)	15(3)	16(16)	80(41)

BEST OF YOUR LUCK