Directorate of Education
Govt. of NCT of Delhi

Practice Test Material
2015-2016

Subject : SCIENCE
Class : IX

Under the guidance of :

Addl. DE (School/Exam)

PRACTICE TEST-1

CLASS: IX

SUBJECT: SCIENCE

GRAVITATION (CHAPTER-10)

Time : 1.30 hrs. **M.M. 20**

Q.1 The value of G on the surface of the earth is 6.6×10^{-11} Nm^2 / Kg^2 what will be its value on the surface of sun.

Q.2 If the mass of the body is 9.8 kg on the earth what would be its mass on the moon.

Q.3 How does the force of gravitation between two objects change when the distance between them is reduced to half?

Q.4 A solid object of mass 50gm and volume 100 cm^3 is put in water. Will the object float or sink? (Give reason)

Q.5 What is the magnitude of the gravitational force between the earth and a 1kg object on its surface ($\mu e = 6 \times 10^{24}$) ($E_R = 6.4 \times 10^6 m$).

Q.6 Differentiate between (g) and (G) (any three)

Q.7 Give the unit of density and relative density and why relative density is unit less?

Q.8 Write a relation between 'g' and 'G' on the moon. Surface the ace due to gravity is 1.67 m/s^2 and radius of moon is $1.74 \times 10^6 m$. Calculate the mass of moon ($G=6.67 \times 10^{-11}$ Nm^2kg^2).

Q.9 a) What do you mean by free fall?

b) Why will a sheet paper fall slower than one that is crumped into a ball?

Q.10 a) A solid object weight is 10N. If it is immersed in water its weight decrease upto 2N. Calculate the density of the solid.

b) What is the significance of Archimedes theory? How do you use it to calculate the relative density of a solid?

c) What is the law of Buoyancy?

PRACTICE TEST-2

CLASS: IX

SUBJECT: SCIENCE

ATOMS AND MOLECULES (CHAPTER-3)

Time : 1.30 hrs. **M.M. 20**

Q.1 Write the molecular formulae of the following

a) Calcium Phosphate b) Ammonium Nitrate

Q.2 Define Avogadro's constant.

Q.3 Calculate the formula unit mass of $NaHCO_3$.

Q.4 Calculate the number of moles in 24.088×10^{21} oxygen atoms.

Q.5 What are polyatomic ions? Give an example each of a polyatomic anion and a polyatomic cation.

Q.6 Calculate molecular mass and molar mass of the following:

(i) C_2H_6 (ii) $MgSO_4$ (iii) C_2H_5OH

Q.7 Carbon dioxide gas is formed when calcium carbonate is heated and also when coal is burnt in the presence of oxygen. What would be the difference in the composition of "Carbon dioxide" in the two cases. State the associated law.

Q.8 Arrange the following in order of decreasing masses:

2 moles of CO_2; 6.022×10^{23} molecules of oxygen; 10 moles of H_2O

Q.9 Differentiate between an atom and a molecule with suitable examples. Give two examples of such elements whose one molecule is made up of only one atom.

Q.10 Renu took 5 moles of carbon atoms is a container and Sushma also took 5 moles of sodium atoms in another container. Whose container is heavier? Whose container has more number of atoms? Justify your answer with reason. Renu and Sushma are then given 100g of carbon and 100g of Sodium respectively. Who has more moles? Calculate.

PRACTICE TEST-3

CLASS: IX

SUBJECT: SCIENCE

STRUCTURE OF ATOM (CHAPTER-4)

Time : 1.30 hrs. **M.M. 20**

Q.1 Mass of an atom is concentrated in its ____

Q.2 What happens to cathode rays when they are subjected to an electric field?

Q.3 Which atom contains only two fundamental particles?

Q.4 Alpha particles are ____ charged.

Q.5 What led Rutherford to discover the existence of the nucleus?

Q.6 Calculate the atomic number of the element that has 12 neutrons and a mass number of 23.

Q.7 Explain how is it that oxygen can be represented by the symbols ${}^{16}_{8}O$ and ${}^{18}_{8}O$ at the same time?

Q.8 The relative atomic mass of an element A is 16.2 These are two isotopes ${}^{16}_{8}A$ and ${}^{18}_{8}A$ of the element. Calculate the percentage of these two isotopes present in the element.

Q.9 Write down the postulates of Bohr's model of an atom?

Q.10 A. Write down the electronic configuration of the following :

(i) Na (ii) Cl^- (iii) K (19)

B. What is the maximum number of electrons that can be accommodated in first shell?

C. Write down the drawbacks of Rutherford's model of an atom.

PRACTICE TEST-4

CLASS: IX

SUBJECT: SCIENCE

DIVERSITY IN LIVING ORGANISMS (CHAPTER-7)

Time : 1.30 hrs. **M.M. 20**

Q.1 The binomial nomenclature is made up of two words a ____name and a ____ name.

Q.2 Choose the right options:

Bilaterally symmetrical, triploblastic, cylindrical, no real organs, pseudo coelomic and parasitic are the characteristics of

(a) Arthropoda (b) Annelida (c) Nematoda (d) Echinodermata

Q.3 Which subphylum includes Balanoglossus and Hermania?

Q.4 Mosquitoes are placed under ____ group.

Q.5 Differentiate between arthropoda and annelida.

Q.6 Write down four general characteristics of porifera with two examples.

Q.7 Complete the flow chart :

Kingdom $\rightarrow$ A $\rightarrow$ B $\rightarrow$ Order $\rightarrow$ C $\rightarrow$ Genus $\rightarrow$ D

Q.8 Correct the following characteristics of :

a) Reptiles: Warm blooded, breathe through lungs, have 3 chambered heart

- ♦ They lay eggs in water

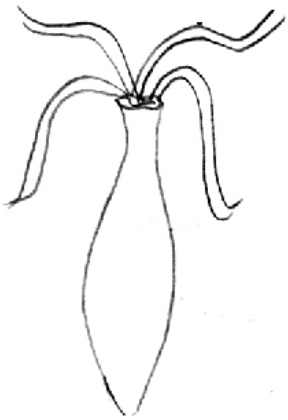
b) Amphibia : Warm blooded

- ♦ 4 chambered heart
- ♦ Have mammary glands for production of milk
- ♦ Produce live young ones except-Ochidna and platypus

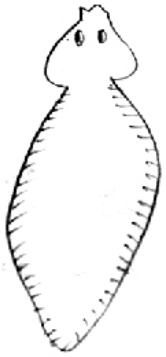
c) Porifera : Motile

- ♦ Pores all over the body
- ♦ Cellular level organisation
- ♦ Soft exosceleton

Q.9 Identify the animal and its group to which it belongs and write 3-3 characteristics of the same.



(A)



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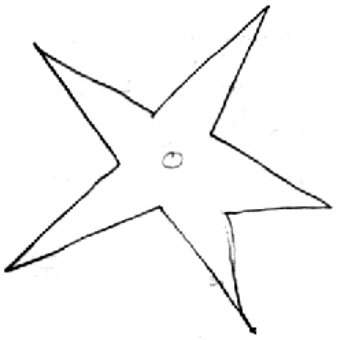


(C)

Q.10 Raju went to his village along with his father to visit his ancestral house which was shut down for many years. As he entered the village, for the first time he saw peacock dancing after rain. There was a big pond in which buffaloes were relaxing in water. He saw a very small baby turtle near the boundary of pond. In the streets, there were hens in the some houses. He has excited to count of fishes in the small pond in the courtyard of the ancestral house which was very dusty and full of spider webs. Suddenly he surprised by feeling a little dark slippery cylindrical creature trying to climb his toe. Later his father made him relaxed by putting that off and telling him it as earthworm. At night when his father was narrating him story night time. He also heard crocking rice of frogs. Next day when his father asked him about his village experience, Raju said that he would went to come again and have fun. 5

1. Pick the various organisms and place them in their class and group they belong to.

2. Comment on the relationship of Raju and his father.

PRACTICE TEST-5

CLASS: IX

SUBJECT: SCIENCE

DIVERSITY IN LIVING WORLD (CHAPTER-7)

Time : 1.30 hrs. **M.M. 20**

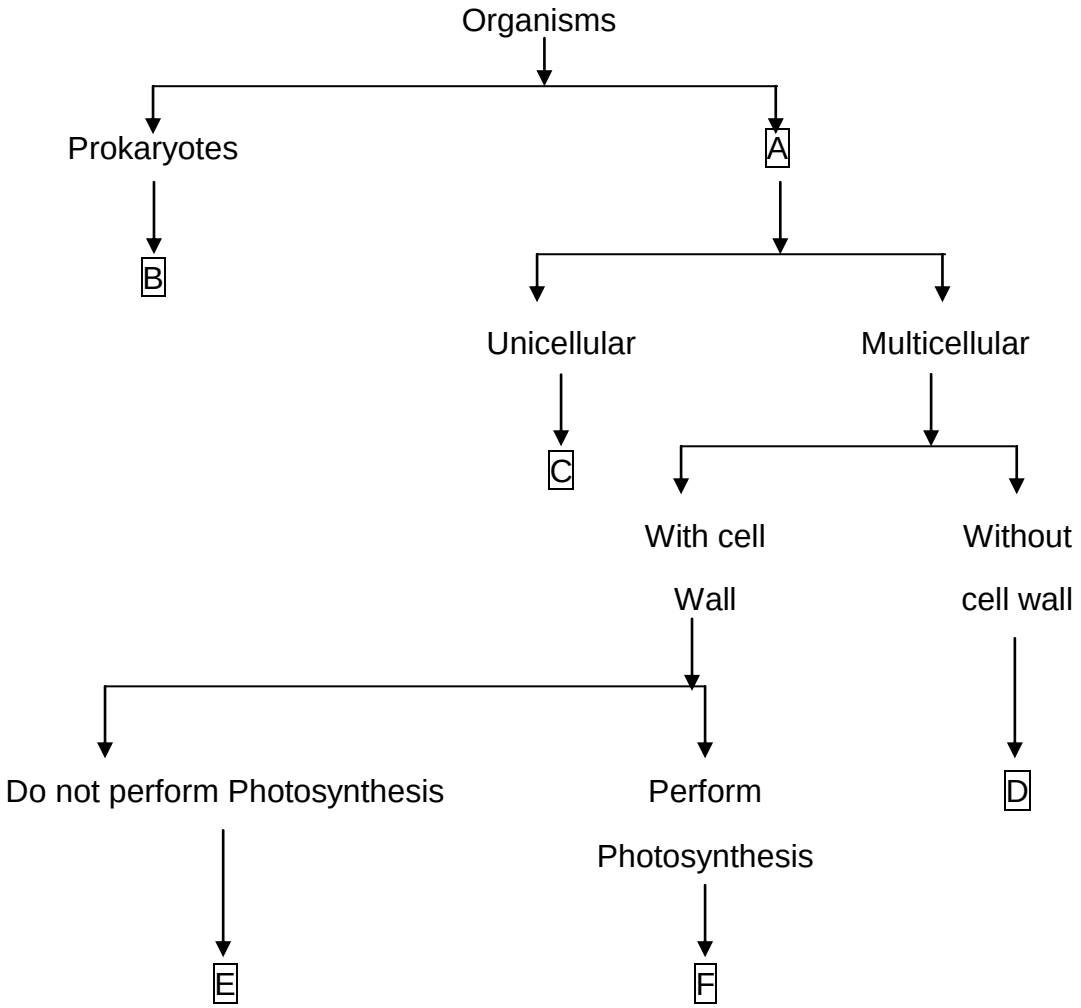
Q.1 How many categories are there in hierarchy of classification?

Q.2 Which area is called the region of mega-diversity?

Q.3 What is the meaning of biodiversity?

Q.4 Who proposed 5-kingdom classification?

Q.5 Complete the following flow chart:



Q.6 Complete the following information about mushroom.

1. Mode of nutrition

2. Cell wall

3. Biological name

Q.7 Match the following:

a.	Monera	i.	Penicillium
b.	Protista	ii.	Amoeba
c.	Fungi	iii.	Mycoplasma

Q.8 Describe the characteristics of kingdom protista. Give two examples.

Q.9 Write the rules of naming organisms scientifically. Give two examples and write their scientific names.

Q.10 Correct the following :

a. Bryophyta shows cryptogamae

b. Gymnosperms are called amphibians of plant kingdom

c. Lichens are the symbiotic relationship of fungi and thalophyta

d. Funaria and Marchantia are Pteridophytes

e. Angiosperms includes monocot only.

PRACTICE TEST-6

CLASS: IX

SUBJECT: SCIENCE

WORK AND ENERGY (CHAPTER-11)

Time : 1.30 hrs. **M.M. 20**

Q.1 In an oscillating pendulum at what position the potential and kinetic energy are maximum?

Q.2 Define 1 kWh.

Q.3 When an object moves on a circular path, what is the work done? Specify the reason.

Q.4 Establish relationship between SI unit and commercial unit of energy.

Q.5 Two identical objects, made of iron and wood, are allowed to fall from the same height on a heap of sand. It is found that the iron object penetrates more in the sand than the wooden object. Which of the two objects has more potential energy?

Q.6 Compare the power at which each of the following is moving upwards against the force of gravity? (given g=10 m/s^2 square)

a) A butterfly of mass 1.0gm that flies upward at a rate of 0.5 m/s^2.

b) A 250 g squirrel climbing up on a tree at a rate of 0.5 m/s^2

Q.7 MCQ's:

i. A body is falling from a height h. After it has fallen a height h/2, it will possess:

(a) only potential energy (b) only kinetic energy (c) half potential and half kinetic energy (d) more kinetic and less potential energy.

ii. In case of negative work, the angle between the force and displacement is :

(a) 0 degree (b) 45 degree (c) 90 degree (d) 180 degree

iii. Water stored in a dam possesses

(a) no energy (b) electrical energy (c) kinetic energy (d) potential energy

iv. A car is accelerated on a leveled road and attains a velocity 4 times of initial velocity. In this process the potential energy of the car:

(a) does not change (b) becomes twice that of initial (c) becomes 4 times that of initial (d) becomes 16 times that of initial.

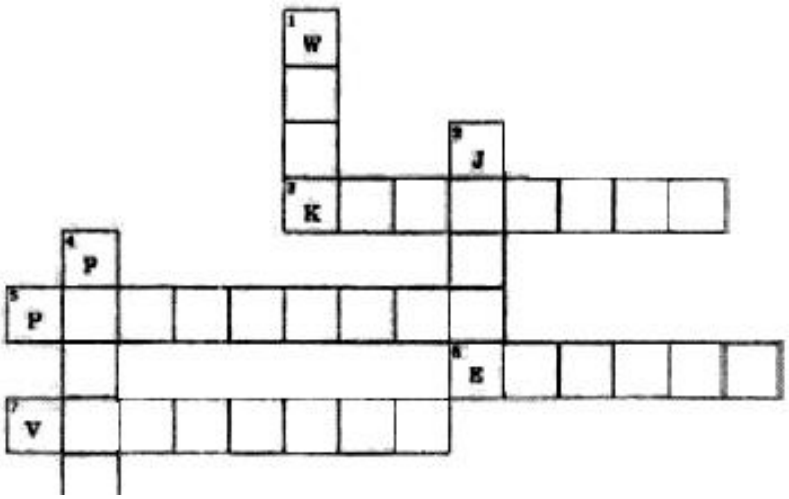
Q.8 Derive an expression for the law of conservation of energy.

Q.9 A lift is designed to carry a load of 4000 kg through 10 floors of a building averaging 6m per floor, in 10 sec. Calculate the power of the lift.

Q.10 Puzzle :

Across : 3. A thousand watts 5. Energy gained by rise in height 6. Capacity to do work 7. Kinetic energy is directly proportional to square of it.

Down: 1. A scalar quantity 2. SI unit of energy 4. Work per unit time.



PRACTICE TEST-7

CLASS: IX

SUBJECT: SCIENCE

WHY DO WE FALL ILL (CHAPTER-13)

Time : 1.30 hrs. **M.M. 20**

Q.1 Differentiate between infectious and non-infectious diseases.

Q.2 Differentiate between chronic and acute diseases. Give two examples of each type.

Q.3 Explain the principle of treatment.

Q.4 Why is it more difficult to develop antiviral medicines as compared to antibiotics?

PRACTICE TEST-8

CLASS: IX

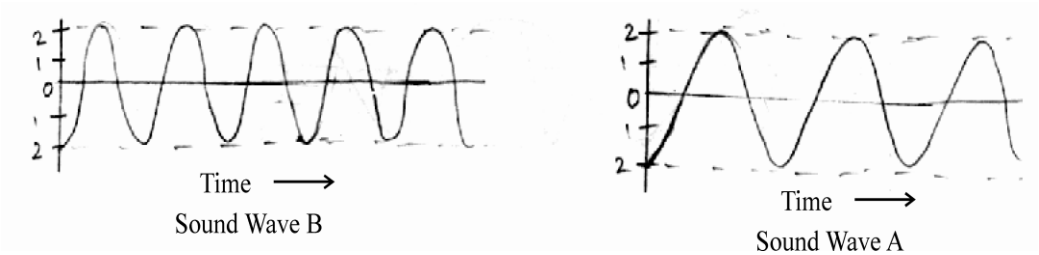
SUBJECT: SCIENCE

SOUND (CHAPTER-12)

Time : 1.30 hrs. **M.M. 20**

Q.1 Which physical quantity determines the pitch of the sound?

Q.2 The following figures represent two sound waves A & B. Identify the correct statement regarding characteristics of these sound waves:



a) Both the sound waves have same amplitudes and frequency

b) Both the sound waves have same amplitudes but different frequencies

c) Both the sound waves have same frequency but different amplitudes.

d) Both the sound waves have different amplitudes and same wavelength.

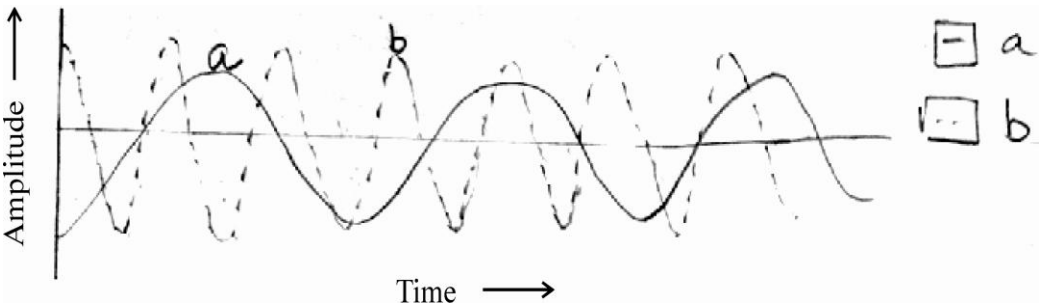
Q.3 Calculate the frequency of a sound wave having time period 0.02 seconds.

Q.4 The range of frequency associated with infrasound is _____.

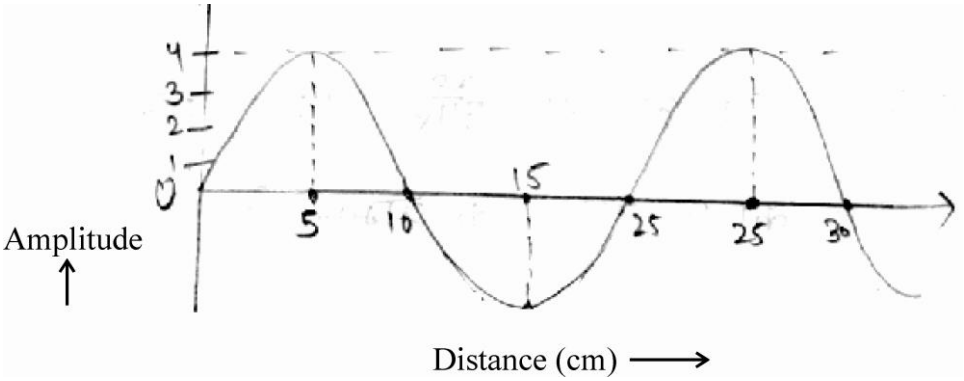
Q.5 A longitudinal wave of wavelength 1cm travels in air with a speed of 330 m/s. Calculate the frequency of the wave. Can this wave be heard by a normal human?

Q.6 How are 'echo' and 'reverberation' different from each other? Mention one similarity between the two.

Q.7 The graphs given below represent the human voice which of the two graphs (a) or (b) is likely to be female noise? Give reasons.



Q.8 The following figure represent a wave of following :



from this figure, find:

a) the amplitude of the wave

b) wavelength and

c) velocity of the wave

Q.9 a) Draw a well labelled diagram of human ear.

b) Explain how human ear receives sound waves from air and transmit the message of hearing to the brain?

Q.10 a) What is sonar?

b) Which principle is involved in working of SONAR?

c) What is an important application of SONAR?

d) A powerful sound signal sent from a strip is received again after 2.4 seconds. How deep is the ocean bottom? (speed of sound in water = 1500 m/s).