

**BLUE PRINT  
SCIENCE (THEORY)  
Class-IX  
Term - II (2011-12)**

**TIME : 3 Hrs**

**MM : 90**

S. No.	Form of Questions	MARKS/ Unit	VSA	SA-I	SA-II	LA	MCQ	Total	
1.	<b>Matter - Its Nature and Behaviour</b> a) Ch.3, Atoms and Molecules b) Ch.4, Structure of Atom	17 (15+2)	1(1)	–	1(3) 2(6)	1(5) –	2(2) –	5(11) 2(6)	} 7(17)
2.	<b>Organisation in the Living World</b> a) Ch.7, Diversity in Living Organisms b) Ch.13, How Do We Fall Ill	25 (19+6)	1(1) –	1(2) 1(2)	2(6) 1(3)	1(5) –	6(6) –	11(20) 2(5)	} 13(25)
3.	<b>Motion, Force &amp; Work</b> a) Ch.10, Gravitation (Floatation) b) Ch.11, Work and Energy c) Ch.12, Sound	36 (26+10)	– – –	1(2) 1(2) –	1(3) 2(6) 1(3)	– 1(5) 1(5)	6(6) – 4(4)	8(11) 4(13) 6(12)	} 18(36)
4.	<b>Our Environment</b> a) Ch.14, Natural Resources	12 (12+0)	1(1)	–	2(6)	1(5)	–	4(12)	} 4(12)
	<b>TOTAL</b>	<b>90 (72+18)</b>	<b>3(3)</b>	<b>4(8)</b>	<b>12(36)</b>	<b>5(25)</b>	<b>18(18)</b>	<b>42(90)</b>	

**Sample Question Paper**  
**SCIENCE (THEORY)**  
**Class-IX**  
**Term - II (2011-2012)**

**TIME : 3 Hrs**

**MM : 90**

**GENERAL INSTRUCTIONS**

- i) *The question paper comprises of two sections, A and B. You are to attempt both the sections.*
- ii) *All questions are compulsory.*
- iii) *There is no overall choice. However, internal choice has been provided in all the five questions of five marks category. Only one option in such questions is to be attempted.*
- iv) *All questions of section A and all questions of section B are to be attempted separately.*
- v) *Questions 1 to 3 in section A are one mark questions. These are to be answered in one word or in one sentence.*
- vi) *Questions 4 to 7 in section A are two marks questions. These are to be answered in about 30 words each.*
- vii) *Questions 8 to 9 in section A are three marks questions. These are to be answered in about 50 words each.*
- viii) *Questions 20 to 24 in section A are five marks questions. These are to be answered in about 70 words each.*
- ix) *Questions 25 to 42 in section B are multiple choice questions based on practical skills. Each question is a one mark question. You are to select one most appropriate response out of the four provided to you.*

## SECTION -A

1. State the law of conservation of mass. 1
2. Gram seeds are soaked in water and upon becoming tender, they split into two equal halves. State the name of these two halves. 1
3. What is meant by the term biosphere? 1
4. List two similarities and two differences between the structures/features of amoeba and euglena. 2
5. State in tabular form the method of transmission of each of the following diseases. 2

(a) Cholera	(b) HIV-AIDS
(c) Malaria	(d) Pneumonia
6. State the difference between density and relative density. Relative density of gold is 19.3. If the mass of one cubic metre of water is 1000 kg find the density of gold in SI units. 2
7. How is work defined in Science? When do we say that one joule work has been done by a force on an object ? 2
8. Write the meaning of formula unit mass. How is it determined ? Calculate the formula unit mass of a compound,  $\text{Na}_2\text{S}_2\text{O}_3$ . (Given, atomic mass of Na=23 u; S=32 u; O=16 u) 3
9. List three conclusions drawn by Rutherford from his  $\alpha$  - particle scattering experiment. State three features of nuclear model of an atom put forward by Rutherford. 3
10. Composition of the nuclei of two atomic species A and B are given below :

	A	B
Protons	6	6
Neutrons	6	8

  - (i) State the mass numbers of A and B.
  - (ii) What is the charge on the atoms A and B?
  - (iii) State the relationship between the two species. 3
11. List any two basis of five kingdom classification proposed by Robert Whittaker. Mention in brief the basis of classification between:
  - (a) bacteria and fungi,
  - (b) plants and animals. 3

12. List in tabular form any three distinguishing features between the animals belonging to the ave group and mammalia group. 3
13. There are lots of advertisements through signboards and mass media about the childhood immunisation under the Public Health Programme. State in brief the principle behind immunisation. List three infectious diseases against which children are immunised in our country. 3
14. State the meaning of 1 pascal. A boy of mass 40 kg is standing on loose sand. If the area of his feet is  $0.04\text{m}^2$  calculate the pressure exerted by the boy on the sand. ( $g=10\text{ms}^{-2}$ ) 3
15. Distinguish between positive work and negative work. When you lift an object up, two forces act on it. Identify these forces. Which one of the two does:  
 (a) positive work,  
 (b) negative work?  
 Justify your answer. 3
16. Define power. Derive its SI unit. An electric bulb is rated 10 W. What does it mean? What is the energy consumed in joules if it is used for 5 minutes? 3
17. State in brief how sound is produced and how it is transmitted through a medium and received by our ears. Name the type of waves responsible for the vibrations of our eardrum. 3
18. List two human activities responsible for the pollution of water bodies. State in brief two harmful effects on the life form that are found in water bodies having wonderful balance between various organisms surviving in them since long. 3
19. What is soil? State its main constituents. List any two practices that are followed for preventing or reducing the soil erosion. 3
20. List six postulates of Dalton's atomic theory. State the law of constant proportion and explain it with the help of an example of a familiar compound. 5

OR

Define following terms :

- (a) One mole of a species  
 (b) Gram atomic mass

Calculate the number of molecules of sulphur ( $S_8$ ) present in 512 g of solid sulphur. Given, atomic mass of S=32 u; Avogadro number ( $N_0$ )= $6.022 \times 10^{23}$  per mole).

21. A person enters a museum and observe the animal specimens. He looks at the one marked "Salamander" and calls it a "Lizard". How will you explain to him that Salamanders and Lizards belong to two different classes? List four distinguishing features and also give one example each of the other members of the above two classes. 5

OR

Distinguish between gymnosperms and angiosperms in respect of the following characters:

- |                     |                         |
|---------------------|-------------------------|
| (a) Nature of Seeds | (b) Reproductive Organs |
| (c) Xylem           | (d) Phloem              |

(e) Ovules

22. Define potential energy. Derive an expression for the gravitational potential energy of an object of mass 'm' at a height 'h' above the earth's surface.

A ball of mass 0.25 kg is moving horizontally with a uniform velocity of  $25 \text{ ms}^{-1}$ . Calculate the kinetic energy possessed by the ball. 5

OR

Define kinetic energy. Derive an expression for the kinetic energy of an object of mass 'm' moving horizontally with a uniform velocity 'v'.

Calculate the energy possessed by an object of mass 50 kg when it is at rest at a height of 10 m above the earth's surface. (Given  $g = 10 \text{ ms}^{-2}$ )

23. Define the following terms and state their S.I. units:

(a) Wavelength                      (b) Frequency                      (c) Amplitude

Derive a relationship to show how the wavelength and frequency of a sound wave are related to its speed.

OR

With the help of a simple diagram describe in brief how depth of seabed at a place is determined by a SONAR.

A SONAR device on a submarine sends out a signal and receives its echoe 3s later. If the speed of sound waves in sea water is  $1530 \text{ ms}^{-1}$  find the depth of the seabed below the submarine.

24. What are the biogeochemical cycles? Which gas makes up 78% of our atmosphere and is also a part of many molecules essential to life? Draw a flow chart to illustrate the cycle of this gas in nature. 5

OR

State two forms in which the elemental oxygen is found in the earth's atmosphere. Mention in brief the essential function performed by each at the place they are found. What are CFCs and why are these considered harmful for the life on the earth?

## SECTION - B

25. A student noted down the following precautions for the experiment "To verify the law of conservation of mass in a chemical reaction."
- i. The spring balance should be held vertical while in use.
  - ii. Before making use of the spring balance it must be ensured that its pointer is at zero mark.
  - iii. The reading of the balance should be noted only when its pointer comes to rest.
  - iv. Mixing of two solutions be done quickly.
  - v. Chemical reaction should be exothermic.

The precautions which need modifications are

- |               |               |
|---------------|---------------|
| a. I and II   | b. II and III |
| c. III and IV | d. IV and V   |
26. For the verification of the law of conservation of mass in a chemical reaction four students A,B,C and D performed the following reactions.
- (A) Added calcium oxide to water.
  - (B) Heated ferrous sulphate crystals in a test tube.
  - (C) Dipped iron nails in copper sulphate solution.
  - (D) Added barium chloride (aq) to sodium sulphate (aq)

The student who is likely to get best results is

- |       |       |
|-------|-------|
| (a) A | (b) B |
| (c) C | (d) D |
27. Which one of the following is the correct statement with reference to cockroach?
- (a) Exoskeleton is soft
  - (b) Exoskeleton is chitinous
  - (c) Endoskeleton is soft
  - (d) Endoskeleton is chitinous
28. In Agaricus, the umbrella shaped above ground part that we observe is
- |                  |                   |
|------------------|-------------------|
| (a) Button Stage | (b) Fruiting Body |
|------------------|-------------------|

- (c) Gills (d) Mycelium
29. The forelimbs of birds are modified as
- (a) Legs (b) Scales  
(c) Wings (d) Clawed Toes
30. Four students A, B, C and D observed roots and leaves of gram and reported as under:-
- (a) fibrous root and reticulate venation.  
(b) fibrous root and parallel venation.  
(c) tap root and reticulate venation.  
(d) tap root and parallel venation.
31. A student observes a plant body in form of undivided thalus or filamentous structure, not differentiated into roots, stem and leaves. This plant must be
- (a) Agaricus (b) Fern  
(c) Pinus (d) Spirogyra
32. The sequence of developmental stages during the life cycle of a mosquito may be represented as:-
- (a) egg, pupa, larva, adult  
(b) egg, larva, pupa, adult  
(c) larva, egg, pupa, adult  
(d) larva, pupa, egg, adult
33. You are given a sphere of radius 2 cm which is made up of an alloy of density  $8000 \text{ kgm}^{-3}$ . If in your school laboratory spring balances of following specifications are available, which one would you select to determine the weight of the given sphere most accurately?
- (a) Range (0-100) gwt; Least Count 1.0 gwt  
(b) Range (0-250) gwt; Least Count 2.5 gwt  
(c) Range (0-500) gwt; Least Count 2.5 gwt  
(d) Range (0-1000) gwt; Least Count 5.0 gwt
34. A student noted the following observations:
- (i) Weight of stone in air = 274 gwt

# MARKING SCHEME

Question	Answer Hints / Value Points	Marks
1. Mass can neither be created nor destroyed in a chemical reaction		1
2. Cotyledons		1
3. The life-supporting zone of the earth where the atmosphere, the hydrosphere and the lithosphere interact and make life possible.		1
4. Similarities : Both unicellular, eukaryotic, have contractile vacuole, heterotrophic nutrition (any two)		½, ½
<b><u>Differences :</u></b>		
<p style="text-align: center;"><b><u>Amoeba</u></b></p> <ul style="list-style-type: none"> <li>• Move with the help of pseudopodia</li> <li>• Chloroplast absent</li> <li>• No photoreceptor</li> <li>(or any other)</li> </ul>	<p style="text-align: center;"><b><u>Euglena</u></b></p> <ul style="list-style-type: none"> <li>Flagellar movement</li> <li>Chloroplast present</li> <li>photoreceptor present</li> <li>(any two)</li> </ul>	½, ½
<p>5. <b><u>Disease</u></b></p> <ul style="list-style-type: none"> <li>a. Cholera</li> <li>b. HIV-AIDS</li> <li>c. Malaria</li> <li>d. Pneumonia</li> </ul>	<p style="text-align: center;"><b><u>Transmitted through</u></b></p> <ul style="list-style-type: none"> <li>Contaminated water</li> <li>Sexual contact</li> <li>Vector/Anopheles female mosquito</li> <li>Air</li> </ul>	4 x ½
6. Density of a substance is mass of a unit volume while relative density of a substance is the ratio of its density to that of water. Density of gold = $19.3 \times 10^3 \text{ kg m}^{-3}$		1 1
7. It is equal to the magnitude of the force multiplied by the distance moved in the direction of the force. 1 joule is the amount of work done on an object when a force of 1 newton displaces it by 1 metre along the line of action of the force.		1 1
8. <b>Formula unit mass :</b> It is the sum of the atomic masses of all atoms in a formula unit of a compound.		1
Formula unit mass of $\text{Na}_2\text{S}_2\text{O}_3$	$= 2 \text{ 'Na' } + 2 \text{ 'S' } + 3 \text{ 'O' }$ $= 2 \times 23 + 2 \times 32 + 3 \times 16$ $= 158 \text{ g}$	1 ½ ½



9. **Three Conclusions :**

- (i) Most of the space inside atom is empty.
- (ii) Positive charge of the atom occupies very little space.
- (iii) All the positive charge and mass of the atom is concentrated in a very small volume within the atom

3 x ½

**Three features of the nuclear model of an atom**

- (i) There is a positively charged centre in an atom called the nucleus. Nearly all the mass of an atom resides in the nucleus.
- (ii) The electrons revolve around the nucleus in well defined orbits.
- (iii) The size of the nucleus is very small as compared to the size of the atom.

3 x ½

10. (i) Mass number of A = 6+6=12

½

Mass number of B = 6+8=14

½

(ii) Net charge on both is zero

1

(iii) A and B are isotopes of an element.

1

11. Cell structure; (ii) Mode and Source of nutrition (iii) Body structure (Any two)

½, ½

(a) Prokaryotic and eukaryotic / Nature of cell / Absence or presence of membrane bound organelles including nucleus.

1

(b) Mode of nutrition / Produce own food / autotrophic and do not produce own food / Heterotrophic

1

12.

<u>Aves</u>	<u>Mammalia</u>
• Body covered with feathers and scales	Feathers and scales are absent
• Forelimbs modified into wings	Wings are absent (Bats are exception)
• Mammary glands absent	Mammary glands present
• Bones hollow	Bones are not hollow
• No teeth in beaks	Teeth present in jaws

13. **Principle :** When the immune system sees an infections microbe, it responds against it and then remembers it specifically. So the next time that particular microbe (or its close relative) enter the body, the immune system responds with even greater vigour and removes the infection more quickly than the first time around.

3 x ½

**Children are immunised against the following infectious diseases:** Tetanus;

Diphtheria; Whooping Cough, Measles, Polio or any other appropriate name (Any three) 3 x ½

14. **1 pascal :** It is the pressure exerted by a force of 1 newton on a surface of area

$$1\text{m}^2 \text{ or } 1\text{Pa} = \frac{1\text{ N}}{1\text{ m}^2} \quad 1$$

$$\text{Thrust} = m \times g = 40\text{ kg} \times 10\text{ ms}^{-2} = 400\text{ N}$$

½

$$\text{Area} = 0.04\text{ m}^2$$

$$\text{Pressure} = \frac{\text{Thrust}}{\text{Area}} = \frac{400 \text{ N}}{0.04 \text{ m}^2}$$

$$= 10000 \text{ Nm}^{-2} \text{ or } 10000 \text{ Pa}$$

15. Work done by a force is said to be positive when the displacement in the object is in the direction of applied force whereas it is negative when the displacement is in the direction opposite to the applied force. 1

Two forces : (i) Weight of the body acting downwards ½

(ii) Force applied on the body acting upwards ½

(a) Positive work is done by the applied force ½

(b) Negative work is done by the force of gravity (weight) ½

16. **Power** : It is the rate of doing work (or the rate of transfer of energy). 1

$$\text{Power} = \text{work} / \text{time}$$

$$= 1 \text{ joule} / 1 \text{ second} = 1 \text{ watt or } 1 \text{ W}$$
½

If power of an electric bulb is 10 W it consumes 10 joules of energy per second. ½

$$\text{Energy consumed by the bulb in 5 minutes} = 10 \text{ W} \times 300 \text{ s}$$

$$= 30000 \text{ joules}$$
1

17. • Sound is produced by plucking/scratching/rubbing/blowing/shaking different objects/  
vibrating vocal cords.

• When an object vibrates it sets the particle of the medium around it vibrating.

• These particles do not travel all the way from the vibrating object to the ear but they displace the adjacent particles by exerting force on them and after displacing the adjacent particles come back to their original positions.

• This process continues in the medium till the sound reaches our eardrum. 4 x ½

Type of waves responsible for the vibrations of eardrum - Longitudinal waves 1

18. **Human activities responsible for pollution of water bodies:**

• Use of fertilisers and pesticides in farms.

• Dumping sewage and waste from factories to water bodies.

• Releasing hot water by specific industries using water for cooling operations.  
(Any two) ½, ½

**Harmful effects on the life form:**

• Poisonous substances may lead to death of micro-organisms which clean water.

• Sewage water may promote growth of some life forms in water bodies and deplete oxygen content and other nutrients which affects aquatic life.

• Aquatic organisms are used to a certain range of temperature and a sudden change in temperature is dangerous as it affect their breeding. (Any two) 1, 1

19. **Soil** : It is the fertile surface layer of the earth which is capable of supporting plant growth. 1

**Main constituents of soil :**

- Small particles of rock (of different sizes)
- Humus
- Various forms of microscopic life (Any two) ½, ½

**Methods of preventing/reducing soil erosion :**

- Vegetative cover on the ground by planting trees and sowing grasses (To reduce the wind-speed).
- Terracing on the sloping field (To retard the speed of flowing water)
- Afforestation to maintain biodiversity (which prevent soil erosion indirectly) (Any two) ½, ½

20. **Postulates of Dalton's atomic theory**

- (i) Matter is made of very tiny particles called atoms.
- (ii) Atoms are indivisible particles which cannot be created or destroyed in a chemical reaction.
- (iii) Atoms of an element are identical in mass and chemical properties.
- (iv) Atoms of different elements have different masses/properties.
- (v) Atoms combine in the ratio of small whole numbers to form compounds.
- (vi) The relative number and kinds of atoms are constant in a given compound. 6 x ½

**Law of constant proportion :** "In a chemical substance the elements are always present in definite proportion by mass". 1

In water, the ratio of the mass of hydrogen to the mass of oxygen is always 1:8, whatever the source of water. Thus if we decompose 9 g of water we will always obtain 1g of hydrogen and 8 g of oxygen. 1

OR

(a) **One mole of a species** : A group of  $6.022 \times 10^{23}$  particles (atoms, molecules or ions) of a species is called one mole of the species. 1

(b) **Gram atomic mass** : The relative atomic mass of an element expressed in grams is called its gram atomic mass.

$$\begin{aligned} \text{Molar mass of } S_8 &= 8 \times \text{Atomic mass of sulphur} = 8 \times 32u \\ &= 256 \text{ g/mole} \end{aligned} \quad 1$$

$$\begin{aligned} \text{Number of moles of } S_8 \text{ molecules} &= \frac{\text{Mass of Sulphur}}{\text{Molar mass of Sulphur}} = \frac{512g}{256g/\text{mole}} \\ &= 2 \text{ moles} \end{aligned} \quad 1$$

$$\begin{aligned} \text{No. of } S_8 \text{ moles} &= 2 \times N_0 \\ &= 2 \times 6.022 \times 10^{23} = 1.2044 \times 10^{24} \text{ moles} \end{aligned} \quad 1$$

21.

Salamander	Lizard
<ul style="list-style-type: none"> <li>Class - Amphibia</li> <li>Live both on land and water</li> <li>Respire through gills/lungs/moist skin</li> <li>Lay eggs in water</li> <li>Have moist skin</li> <li>Three chambered heart</li> </ul>	<ul style="list-style-type: none"> <li>Class - Reptile</li> <li>Creeping/Crawling animals that live on land</li> <li>Respire through lungs</li> <li>Lay eggs on land</li> <li>Have scales</li> <li>Three chambered heart with a partial septum. (Crocodiles have 4 heart chambers) (Any four)</li> </ul>
Example : Frogs, Toads (Any one)	Snakes, Turtle, Crocodiles (Any one)

4x1

1

OR

Character	Gymnosperms	Angiosperms
Nature of Seeds	Bear naked seeds i.e. seeds not enclosed in a fruit	Bear seeds enclosed in a fruit
Reproductive organs	Do not have flowers	Produce flowers
Xylem	Xylem tissues lack vessels	Xylem tissues contain vessels
Phloem	Lack Companion Cells	Contain Companion Cells
Ovules	Not located in the ovary	Enclosed in the ovary

22. **Potential energy:** It is the energy present in a body by virtue of its position or configuration.

Consider an object of mass 'm' which is raised to a height 'h' above the earth's surface. For doing this a force equal to its weight, mg, is required and the work done by this force in raising the body is stored in the body as gravitational potential energy.

1

$$\therefore \text{Gravitational potential energy} = \text{force} \times \text{displacement}$$

$$= mg \times h = mgh$$

1

Here  $m = 0.25 \text{ kg}; v = 25 \text{ ms}^{-1}$

$$\text{Kinetic energy} = \frac{1}{2} mv^2$$

 $\frac{1}{2}$ 

$$= \frac{1}{2} \times 0.25 \text{ kg} \times (25 \text{ ms}^{-1})^2$$

1

$$= 78.125 \text{ km}^2\text{s}^{-2} \text{ or } 78.125 \text{ J}$$

 $\frac{1}{2}$ 

OR

**Kinetic energy :** It is the energy possessed by a body by virtue of its motion.

1

Consider a body of mass 'm' which is initially at rest and a force 'F' acts on it which displaces it through a distance 's' with a uniform acceleration 'a'. If the final velocity of the body is 'v', then workdone on the body by the force 'F' is

$$W = F \times s = ma.s \quad (i) \quad 1$$

But  $v^2 = 2as$  {  $\therefore v^2 - u^2 = 2as$  and  $u=0$  }

$$\therefore as = \frac{v^2}{2} \quad (ii)$$

from equations (i) and (ii)

$$W = \frac{1}{2} mv^2$$

Since this workdone is the change in kinetic energy of the body. Therefore

$$KE = \frac{1}{2} mv^2 \quad 1$$

Here  $m = 50 \text{ kg}$ ;  $h = 10 \text{ m}$ ;  $g = 10 \text{ ms}^{-2}$

$$\text{Potential energy} = mgh \quad \frac{1}{2}$$

$$= 50 \text{ kg} \times 10 \text{ m} \times 10 \text{ ms}^{-2} \quad 1$$

$$= 5000 \text{ kg m}^2\text{s}^{-2} \text{ or } 5000 \text{ J} \quad \frac{1}{2}$$

23. (a) **Wavelength** : It is the distance between two consecutive compressions or two consecutive rarefactions. Its SI unit is metre (m) 1
- (b) **Frequency** : It is the number of oscillations completed by a particle of medium per second during wave propagation. Its SI unit is hertz (Hz) 1
- (c) **Amplitude** : It is the maximum value of displacement of the particles of the medium from their mean positions. Its SI unit is metre (m). 1

The speed of sound waves is defined as the distance through which a point on a wave, such as a compression or a rarefaction travels per unit time. We know that

$$\text{speed} = \text{distance} / \text{time} \quad 1$$

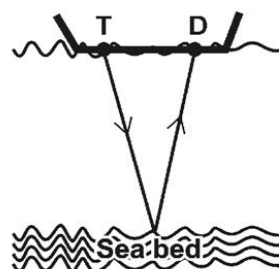
$$v = \lambda/T \quad (T = \text{Time period of the wave})$$

$$v = \lambda\nu \quad (\therefore \frac{1}{T} = \nu - \text{Frequency of the wave})$$

$$\therefore \text{speed} = \text{wavelength} \times \text{frequency} \quad 1$$

OR

Sonar consists of a transmitter, T and a detector, D and these are installed in a submarine (or a ship or a boat) as shown in the figure. The transmitter produces and transmits ultrasonic waves which travel through water and after striking an object on the seabed get reflected back and sensed by the detector. If the time interval between the transmission and reception of the ultrasound signal be  $t$  and the speed of sound through seawater be  $v$ , the total distance  $2d$  may be calculated.



$$2d = v \times t$$

∴ Depth of the seabed  $d = vt/2$

3

Here  $t = 3s$ ;  $v = 1530 \text{ ms}^{-1}$ ;  $d = ?$

$$d = vt/2$$

½

$$= \frac{1530 \text{ms}^{-1} \times 3s}{2}$$

1

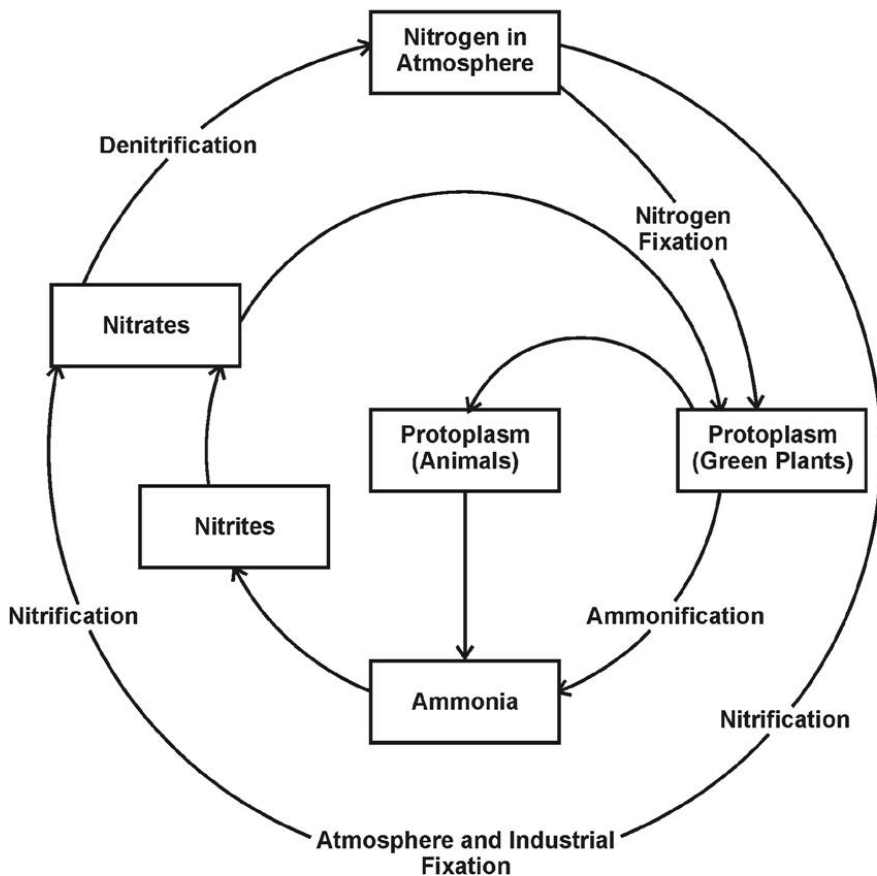
$$= 2295 \text{ m}$$

½

24. **Biogeochemical cycles** : A constant interaction in which continuous transfer of matter and energy between the biotic and abiotic components of the biosphere occur, which makes the biosphere a dynamic but stable system, is known as a biogeochemical cycle. 1½

### Nitrogen ½

#### Nitrogen cycle in nature



3

OR

Oxygen ( $O_2$ ) and ozone ( $O_3$ )

$\frac{1}{2}$ ,  $\frac{1}{2}$

**Function of  $O_2$**  : It is used in three processes - Combustion, respiration and in the formation of oxides of nitrogen. 1

**Function of  $O_3$**  : It absorbs harmful radiations from the sun. This prevents those harmful radiations from reaching the surface of the earth where they may damage many forms of life.

CFC's are the carbon compounds having both fluorine and chlorine which are very stable and not degraded by any biological process. These are man-made compounds which persist in the atmosphere. 1

These compounds reach the ozone layer in the upper atmosphere and react with ozone molecules which cause reduction of the ozone layer. If the ozone layer in the atmosphere is depleted then the harmful radiations would reach the earth and cause skin cancer, damage plants and ultimately a threat to the life on the earth. 1

Section B			
25	(d)	34	(b)
26	(d)	35	(a)
27	(b)	36	(d)
28	(a)	37	(c)
29	(c)	38	(c)
30	(b)	39	(d)
31	(d)	40	(d)
32	(b)	41	(c)
33	(c)	42	(b)