

# **GULF SAHODAYA(SAUDI CHAPTER) EXAMINATION 2013**

**Subject: Science**

**Class – IX**

**Time: 3 hours**

**Maximum Marks : 90**

**Total Number of Pages: 7**

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## **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) Question numbers **1 to 3 in Section-A** are **one mark** questions. These are to be answered in **one word** or in **one sentence**.
- (vi) Question numbers **4 to 7 in Section-A** are **two marks** questions. These are to be answered in about **30 words** each.
- (vii) Question numbers **8 to 19 in Section-A** are **three marks** questions. These are to be answered in about **50 words** each.
- (viii) Question numbers **20 to 24 in Section-A** are **five marks** questions. These are to be answered in about **70 words** each.
- (ix) Question numbers **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 two ways by which percentage of CO<sub>2</sub> in our atmosphere is fixed. 1
2. Which group of plants is called vascular cryptogams ? Give two examples. 1
3. What are polyatomic ions? Give two examples. 1
4. Classify the following in their respective Phylum / Class: Jellyfish; Earthworm; Cockroach; Rat. 2
5. A person is suffering from loss of appetite with a feeling of nausea and he is passing Dark yellow urine. Identify the disease and suggest any two methods of preventing it. 2
6. The power of a motor pump is 2 kW. How much water per minute the pump can raise to a height of 10 m. (Given  $g = 10 \text{ m/s}^2$ ) 2
7. Steel sinks in water but a steel boat floats. Why ? 2
8. a. Write the formulae of the following compounds. 2+1  
i) Potassium Sulphate ii) Magnesium Nitride  
b. What are isotopes? Write its two applications?
9. The atomic no. of Aluminium is 13. How many electrons, protons and neutrons are present in Al<sup>3+</sup> ion? Atomic mass of Aluminium is 27. 3
10. There are lots of advertisements through signboards and mass media about the childhood immunization under the Public Health Programme. State in brief the principle behind immunization. List three infectious diseases against which children are immunized in our country. 3
11. What are the advantages of classifying organisms? (3 points) 3
12. (a) Give two differences between density and relative density. 3  
(b) The relative density of silver is 10.8. Find its density in SI unit.
13. (a) What is the work done by the gravitational force on earth in moving round the Sun. 3  
(b) In a tug of war, one team wins and the other team loses. Which team does positive work and which one does negative work? Justify your answer.
14. (a). Calculate the molecular mass of sulphur molecule. (Atomic mass of S = 32u) 3  
(b) What is the mass of 10 moles of sodium sulphite? (Atomic mass-Na = 23u, S = 32u, and O = 16u)
15. (a) Name the two gasses which together constitute 99% of the atmosphere. 3  
(b) Why water is essential for life? ( any two points)  
(c) What is biogeochemical cycle?
16. What is ozone hole? Where is it found? What is its effect ? 3  

Or

Draw a neat and labelled diagram to show carbon cycle in nature.
17. Write three conventions that are followed while writing scientific names of the species. 3
18. (a) How is the kinetic energy of a moving train affected if its velocity becomes one third? 3  
(b) A car and a bus are moving with the same speed. Which one has more kinetic energy? Explain.

19. (a) Echoes are not heard in a small room. Why ? 3  
 (b) An echo is heard on a day when the temperature is about 30°C. Will the echo be heard sooner or later if the temperature falls to 4°C ? Explain.

20. (a) State the law of conservation of energy. 5  
 (b) Illustrate the law of conservation of energy by discussing the energy changes when we draw a pendulum bob to one side and allow it to oscillate.  
 (c) A bulb lights up when connected to a battery. State the energy change which takes place : (i) in the battery (ii) in the bulb.

OR

- (a) What is the commercial unit of energy?  
 (b) Derive the relationship between commercial unit of energy and SI unit of energy.  
 (c) An electric heater of 1000 watt is used for 2 hours a day. How many units of energy will be consumed if it is used for a month of 30 days ? Find the cost of using it, if one unit of electricity costs Rs 3.

21. (a) State the law of constant proportion. Magnesium and Oxygen combine in the ratio of 3:2 by mass to form magnesium oxide. How much oxygen is required to react completely with 12g of magnesium? 5  
 (b) What do the following symbol/formulae state for: i) 2[O] ii) 3O<sub>2</sub>  
 (c) Calculate the no. of atoms in 52gram of helium. (atomic mass of helium is 4u)

OR

- (a) Describe the Thomson's model of the atom with the help of a neat and labeled diagram.  
 (b) Define mole.  
 (c) Explain Bohr's rules for distribution of electrons into different shell

22. (a) How does the atmosphere act as a blanket (2+2+1)  
 (b) Define the following and name the organisms involved in the process.  
 i) Nitrogen fixation ii) Nitrification  
 (c) What is soil erosion?

OR

- (a) Draw a neat and labelled diagram to show nitrogen cycle in nature.  
 (b) Write any two factors which help in soil formation.  
 (c) List any two human activities which would lead to an increase in carbon di oxide content of air.

23. (a) Why is sound wave called a longitudinal wave ? 5  
 (b) Derive a relationship to show how the wave length and frequency of a sound wave are related to its speed.  
 (c) Which wave property determines (i) pitch (ii) loudness

OR

- (a) Explain the working and application of a sonar.  
 (b) A sonar device picks up a return signal after 3 seconds. How far is the object ? (speed of sound in water = 1440 m/s )

24. In angiosperms, seeds are developed inside the fruit. The seeds may have single or Double cotyledon which becomes green on germination.

5

- (i) What will happen if the colour of the cotyledon is not green?
- (ii) How the plants are classified on the basis of number of seed leaves?
- (iii) Seeds of pine trees are found to be naked. What do you call such a tree ?
- (iv) Can you identify a monocotyledon or dicotyledon from their leaves ?
- (v) What will happen if pollination does not take place in angiosperm?

OR

- (a) Write any four features that all chordates possess.
- (b) Differentiate between aves and mammals (Any three points)

**Section B** (18 X 1 = 18)

25. When we react Copper sulphate and Sodium carbonate to prove law of conservation of mass, the products formed will be

- i) Copper carbonate and Sodium carbonate
- ii) Copper carbonate and Sodium sulphate
- iii) Copper sulphate and Sodium sulphate
- iv) Copper sulphate and Sodium carbonate

26. Mass remains conserved during chemical reaction is a statement of:

- i) Law of constant proportion
- ii) Law of multiple proportion
- iii) Law of conservation of mass
- iv) Dalton's law

27. A student while verifying the laws of reflection of sound measured the angle between the incident sound wave and the reflected sound wave as  $100^\circ$ . The angle of reflection is

- (a)  $100^\circ$
- (b)  $50^\circ$
- (c)  $40^\circ$
- (d) none of these

28. Two students while performing an experiment on verification of laws of reflection of sound are provided with the following choices.

- (i) Using a narrow tube or a wide tube
- (ii) Using a faint source of sound or strong source of sound

The best result would be obtained using the combination of

- (a) Narrow tube and faint source of sound
- (b) Narrow tube and strong source of sound
- (c) Wide tube and faint source of sound
- (d) Wide tube and strong source of sound

29. In a spring balance the space between zero and 25 g marks is divided into 5 equal parts. The least count of the spring balance is
- (a) 5 g wt
  - (b) 2.5 g wt
  - (c) 25 g wt
  - (d) 0.25 g wt
30. The density of tap water is less than that of sea water. If an object is completely immersed in both one by one, its loss in weight will be
- (a) more in sea water
  - (b) less in sea water
  - (c) equal in the two cases
  - (d) none of these
31. While determining the density of the material of a metallic sphere using a spring balance and a measuring cylinder, a student noted the following reading
- (i) Mass of the sphere = 72g
  - (ii) Reading of water level in the cylinder without sphere = 54ml
  - (iii) Reading of water level in the cylinder with sphere = 63 ml
- On the basis of these observations, the density of the material of the sphere is
- (a) 648 g/cc
  - (b) 6.48 g/cc
  - (c) ) 8.0 g/cc
  - (d) 80 g/cc
32. The buoyant force experienced by a body is :
- (a) inversely proportional to the volume of the fluid displaced
  - (b) directly proportional to the weight of the fluid displaced
  - (c) directly proportional to the square of density of the fluid displaced
  - (d) none of these
33. A student takes a wooden block of mass 5 kg and dimensions 40 cm X 20 cm. He places it on the loose sand filled in a rectangular tray such that its side of dimentions (i) 40 cm X 20 cm (ii) 40 cm X 10 cm (iii) 20 cm X 10 cm lie on the sand. On the basis of his observation he may conclude that the penetrations of the wooden block into the loose sand is
- (a) Maximum when it lied on its side of dimensions 40 cm X 20 cm
  - (b) Maximum when it lied on its side of dimensions 40 cm X 10 cm
  - (c) Maximum when it lied on its side of dimensions 20 cm X 10 cm
  - (d) Same in all the three cases
34. Two students A and B while recording the depth of depression of sand for two surfaces of area  $A_1$  and  $A_2$  of a block, record the pressures as  $P_1$  and  $P_2$  such that  $P_1 > P_2$ . Then
- (a)  $A_1 = A_2$
  - (b)  $A_1 > A_2$
  - (c)  $A_1 < A_2$
  - (d)  $A_1 = 2 A_2$

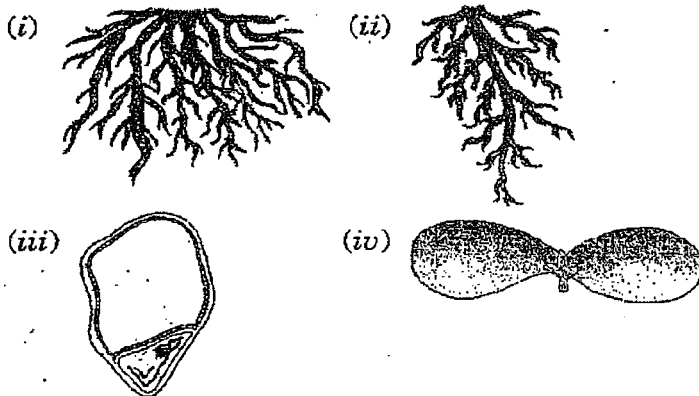
35. A pulse is formed

- (a) in a small part of the medium
- (b) in a large part of the medium
- (c) in vacuum
- (d) all of the above

36. Shyam was calculating the velocity of wave using a slinky. He asked his teacher regarding the features of the spring to be used. The teacher replied that the spring should be

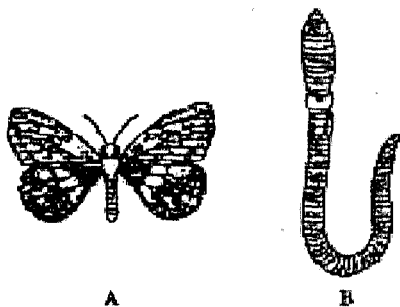
- (a) Long, soft but not flexible
- (b) Short, hard and flexible
- (c) Short, soft and flexible
- (d) Long, soft and flexible

37. Identify the dicots from the following:



- (a) (i) and (iii)
- (b) (ii) and (iii)
- (c) (i) and (iv)
- (d) (ii) and (iv)

38. Two pictures of animals A and B are shown below. Which characteristic features of their bodies are specific features of their respective phyla?



- (a) Antennae of A and segments of B.
- (b) Three pairs of legs of A and scales of B.
- (c) Jointed appendages of A and metamerically segmented body of B.
- (d) Wings of A and slender body of B.

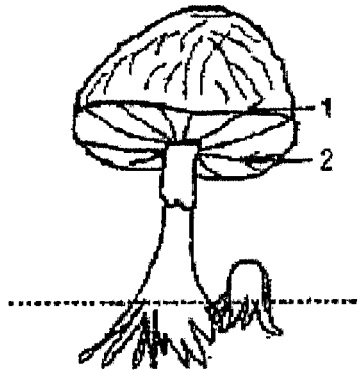
39. The structure by which the nucleus in *Spyrogyra* cell is held?

- (a) Cell wall
- (b) Cytoplasmic strands
- (c) Cell membrane
- (d) Pyrenoids

40. Needle-shaped structure in *Pinus* plant is:

- (a) Leaf
- (b) Shoot
- (c) Stem
- (d) Reproductive part

41. What are (1) and (2) in given diagram?



- (a) Gills and annulus
- (b) Pileus and gills
- (c) Stipe and annulus
- (d) Pileus and stipe

42. A glandular collar-like thickening found in 14-16 segments of earthworm is called as

- (a) Clitellum
- (b) Nephrostome
- (c) Setae
- (d) Chaetae.