

PART I
PHYSICS & CHEMISTRY
EXAMPLE FOR DIFFERENT TYPES OF QUESTIONS

Instruction: The Question cum answer booklet contains 39 questions including sub question of match the following and main questions.

1. Due to heavy traffic near the school the department of traffic police wants to install automatic traffic lights. This can be done by using the Principle of
 - a) Raman effect
 - b) Radiography
 - c) Holography
 - d) Photoelectric effect

2. Water is to be sterilized for drinking purpose without using any chemicals this can be done by using
 - a) u v rays
 - b) visible light
 - c) short wave length radio waves
 - d) long wave length Radio waves

3. In a heat engine the linear motion of the Piston is converted into rotation by the component
 - a) Spark plug
 - b) Carburetor
 - c) Crank Shaft
 - d) Fuel injection pump

4. An Engineer wants to design an engine to convert 800 KJ of heat into 840KJ of useful mechanical work. The correct statement related to the above engine is that it
 - a) Is less efficient
 - b) Is more efficient
 - c) Cannot be designed
 - d) Is 100% efficient

5. An astrophysicist observes that Galaxy "A" is more red shifted than galaxy "B". The conclusion that can be drawn from this is that
 - a) The velocity of 'A' is more than 'B'
 - b) The velocity of 'B' is more than 'A'
 - c) Both the galaxies have equal velocity.
 - d) Both the galaxies are at rest.

6. In a nuclear reactor, the number of cadmium rods used are less than the required number. Then one of the possibilities is
 - a) The reactor may explode
 - b) The chain reaction stops
 - c) Number of fissions decrease
 - d) The number of neutrons decreases

7. If emission test is required for an LPG run auto rickshaw, the availability of oxygen is moles for combustion of one mole of butane is
 - a) Less than 5
 - b) Between 8.5 and 9.5
 - c) Between 9.5 and 10.5
 - d) More than 10.5

8. In a soap industry the chemist forgets to add sodium chloride during the manufacture of soap, The possible effect is
 - a) Soap cannot be easily separated.
 - b) Chemical composition of soap changes
 - c) Soap will not get required colour
 - d) The solubility of soap increases

9. Borosilicate glass is used to make school laboratory equipments because it
 - a) Is highly transparent
 - b) With stands sudden changes in the temperature and transparent
 - c) Has high refractive index
 - d) Absorbs radiations

10. Using sodium hydroxide as one of the raw materials it is possible to prepare
 - a) Soaps and detergents
 - b) Cement and ceramics
 - c) Glass and plastics
 - d) Cement and glass

Fill in the blanks with suitable terms

1X3=3

11. A p-n junction allows current to pass in one direction. This is called
12. Radar gun works on the principle of
13. The device which converts light energy into electrical energy is
14. Match the following and write the answers below the questions in the space provided:

A	B	answer
1. Natural gas	L.P.G.	1
2. Butane	explosives	2
3. Benzene	to detect leakage of LPG	3
4. Toluene	emission test	4
	Carbon black	
	Perfumes	
	Exhaust gas	

15. A cyclist going round a curve leans towards the centre of the curve. Give reason.
16. What is a centrifugal Governor?

17. What is the colour of the star Betelgeuse?
18. Mention the purpose of using a plane glass sheet in a solar cooker?
19. How does the pressure cooker help in saving energy?
20. Write the balanced chemical equation of the reaction between sodium carbonate and calcium chloride.
21. Write any two factors on which the induced EMF depends. 2X9=18
22. Draw a neat sketch of a D.C. Dynamo
23. What is electromagnetic spectrum?
 a) Name the electromagnetic radiations which has
 1. The lowest frequency and
 2. Lowest wavelength
24. Draw a neat a ketch to show the exhaust stroke of an exiemal combustion engine.
25. Give scientific reasons for the following
 a) Iron articles are electroplated with chromium
 b) Calcium silicate is a protective layer for the molten iron in the blast fumes
 c) Copper is not used to prepare Hydrogen in the laboratory
 d) Ore of copper is not concentrated by hydraulic washing.
26. What is the role of magnesium and dilute hydrochloric Acid in the preparation of silicon.
27. Write the stops involved in recycling of plastics.
28. Name the two types of Hardness in water. On what principle can the hardness of water be removed?
29. Draw a circuit symbol of each of the following
 a) Forward biased diode
 b) Transistor of npn
30. State the universal law of gravitation, Prepare it by a mathematical equation/
31. What is impure spectrum? Why is Raman scattering called incoherent and ray height scattering called coherent scattering?
 On what basis did Raman give satisfactory explanation of incoherent scattering?
32. A radio active element has a half life period of 8 days. If measured how the mass of that element is 3.125g. What was its initial mass 40 days before.

33. Draw a neat diagram of the device the converts nuclear energy into electrical energy.
34. State the law of conservation of momentum
“The escape velocity on the earth is 11.2km/s” What does it mean? How are orbital and escape velocities related to one another?
At what height Geostationary satellite is launched.
35. How does a protesters attain the stable state?
What is neutron star?
36. Draw a neat diagram of each of the following
1. Blast furnace used to extract iron.
 2. Electrolytic refining of copper.

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BIOLOGY
DIFFERENT TYPES OF QUESTION

Instruction: The Question-cum-booklet contains 22 questions including sub questions of match the following and main questions.

I. FOUR ALTERNATES ARE GIVEN TO EACH STATEMENT CHOOSE THE CORRECT ANSWER AND WRITE IN THE SPACE PROVIDED 1X5=5

1. One of the following statements is true.
 - a) Ragi plant has parallel venation and cotyledon raises above the soil during germination.
 - b) Regi plant has parallel venation and cotyledon remains below the soil during germination.
 - c) Ragi plant has reticulate venation and cotyledon remains below the soil during germination.
 - d) Ragi plant has reticulate venation and cotyledon raise above the soil during germination.

2. A person is advised not to donate blood after being tested for ELISA, because he is infected by
 - a) HIV b)HBV c)HSV d)STV

3. After being pricked by a thorn, a boy withdraws his leg immediately. The center of this action is
 - a) Cerebrum b) Cerebellum c)Spinal Cord d)Hypothallamus

4. Vegetative reproduction found in multicellular algae is a natural process of
 - a) Cloning c) Genetic engineering
 - b) DNA finger printing d) Recorabining DNA

5. Blood report of a 40 year old person indicates high glucose level. He may be at risk of getting.
 - a) Glaucoma b)Cataract c) Astigmatism d) Retinopathy

II. MATCH PART 'A' WITH PART 'B' AND WRITE THE CORRECT ANSWERS IN THE SPACE PROVIDED 1X4=4

A	B	ANSWERS
1.Areolar tissue	a)provides frame work to Spleen	1.
2.Ligament	b)attaches muscles to bones	2.
3.Adipose tissue	c)digesta toxic substances	3.
4.Tendores	d)provides frame work to entire body	4.
	e)attaches one bone to another	
	f)avoids friction in joints	
	g)acts as a shock absorber	

III. ANSWER THE FOLLOWING QUESTIONS IN A WORD OR A SENTENCE

6. What is biotechnology?
7. Which important characteristic feature of selaginella depicts that it is highly evolved than Riccia?
8. Ramya experiences numbness in her limbs due to accumulation of watery fluids, name the disease and adulterant that has caused it.
9. Why is goiter called an endemic disease?

IV. ANSWER THE FOLLOWING IN 2-3 SENTENCES EACH 2X6=12

10. How are ear and throat connected? What is its advantage?
11. Raju resides in an area where not much of lichens are found. List any four health hazards he may be suffering from.
12. Explain the structure of HIV in 2 or 3 sentences.
13. Mention one function of the following
 - a) Sclereids
 - b) Companion cells
14. How can vanaspathi is ghee be detected?
15. A student has uprooted a weed plant in the school garden. The student infers that it is a dicot plant. Support the inference.
16. How does electrochemical fixation take place during nitrogen cycle?

V. ANSWER THE FOLLOWING 3 X 2=6

17. Draw a diagram to show external features of fish and label any two parts?

VI. 4X1=4

18. Draw a diagram of vertical section of human brain and label any four parts.

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