SCIENCE

SECTION A 1 MARKS EACH

1. Two thin lenses of the powers + 3.5 D and – 2.5 D are placed in contact. Find the power of the combination?
2. What is corona?
3. Where are the nephridia found in the earth worm?
4. A piece of wire is pulled till its length becomes double. Compare the new resistance with the original.
5. What is the ganglion?
6. Name the raw materials that are fed in the blast furnace in the extraction of iron.
7. Name the two types of tropism.
8. State any two activities from the daily life in which the solar energy is utilized?
9. What are the terrestrial planets?
10. Write the harmful effects of the ozone depletion.

SECTION B 2 MARKS EACH

11. What are the stomata and lenticels?
12. What was the source of the heat in the early stages of the earth? How did it help in the formation of the earth?
13. What is the function of the earth wire? Why is it necessary?
14. Define syngamy and menopause.
15. Where are the genes located? What is the chemical nature of genes?

SECTION C 3 MARKS EACH

16. name the respiratory organ in:
    a) fish
    b) mosquito
    c) earthworm
    d) dog
17. What are heredity, evolution and variation?
18. How is sex determined in humans?
19. how can you make the balance with the environment and development?

SECTION D 4 MARKS EACH

20. Mention the methods of the birth control in humans.

21. Define genetics. What is the contribution of Mendel in this branch of biology?
22. What are the essential properties of the rocket fuel? What is the composition of the liquid fuel? What is the composition of the solid fuel? How do we estimate the age of the universe?
23. Explain the characteristics of the ideal fuel.
24. Explain what a wind mill is and wind farm? What are their advantages? Give their uses.

SECTION E 5 MARKS EACH

25. Explain the life cycle of the star.
26. explain the mechanism of the photosynthesis with the diagram of the chloroplast
27. What are the soaps and the detergents? Explain their cleansing action.
28. Explain the manufacture ammonia.

SAMPLE QUESTION PAPER 5

SCIENCE

SECTION A 1 MARKS EACH

1. Which part of the roots is involved in the exchange of the gases?
2. What are the jovian planets?
3. What is the zygote and gamete?
4. Define gene.
5. Define homologous organs.
6. Why the burning of the wood is disadvantageous?
7. Give one reason that nuclear fission is better than combustion of coal.
8. What constitutes the source of energy?
9. Why is alumina dissolved in cryolite?
10. Define the calorific value and the ignition temperature of the fuel.

SECTION B 2 MARKS EACH

11. A telescope has the objective of the focal length 140 cm and the eye piece 5 cm. find the magnification and the distance between the lenses?
12. Mention two functions of the human ovary.
13. A piece of wire having the resistance R is cut into four equal parts.

a) How will the resistance of each part compared to the original?
b) If the four parts are placed in parallel find the effective resistance?

14. Differentiate between the tropic and the nastic movements.
15. What is a solar constant? Give its value.
16. What are the male and the female gonads? Mention their functions.
17. A coil of the copper wire is connected to the galvanometer. What will happen of the bar magnet is:
    a) Pushed into the coil with the North Pole entering first.
    b) Pulled out of the bar magnet.
    c) Held stationary inside the coil?
18. what is the role of the temperature on the following:

b) Dissociation of electrolyte.
c) Rate of reaction in the gaseous state,.
d) Concentration of the products in the exothermic reaction in the closed container.

19. What is ISRO and mention its aims.

SECTION D 4 MARKS EACH

20. A white powder is used in the reduction of the iron from its ore in the blast furnace. Name it. Give its chemical formula. How it is prepared?
21. Explain the controlled chain reaction with the diagram.
22. Explain the preparation of polyester.
23. How can you reduce the volume of the waste? Name two materials which can be recycled.
24. Explain the experiment to show that ammonia is alkaline.
25. Explain the Kepler's law. Explain the other law that the orbit is ecliptic.

SECTION E 5 MARKS EACH

26. Explain the excretion in the earthworm with the diagram.
27. explain the factors that effect the photosynthesis
28. Explain the ocean energy systems.

SAMPLE QUESTION PAPER 1

SCIENCE

SECTION A 1 MARKS EACH

1. What will happen if the heating is not controlled in the manufacture of the plaster of Paris?

2. What happens to the useful substances that flow in the nephridia?
3. A man users a convex lens with the focal length 6.2 cm. what is the magnification produced by the convex lens. Let D = 25 cm.
4. What is the charge on one electron?
5. Name two kinds of the cells of xylem.
6. Name the types of the nitrogenous bases present in DNA.
7. Name a metal which is not corroded in air.
8. What is a sex chromosome?
9. Define pollution and the pollutants.

SECTION B 2 MARKS EACH

10. State the law of chemical equilibrium. Write the expression for this equation

$$2X + 4Y \longrightarrow 3Z$$

11. A concave mirror produces 3 times the magnified real image of the object placed 10 cm in the front of the mirror. Where is the image located?
12. What are the magnetic lines of force? How the direction of the magnetic field at a point is is determined? Mention two properties of the magnetic lines of forces.
13. What is autonomic nervous system?
14. Mention any two differences between the two types of the solar cookers.
15. Write the names of the two devices used for the control of the particulate emission.

SECTION C 3 MARKS EACH

16. Define conservation. Write two conservation practices.
17. Describe the surgical methods of the birth control in humans.
18. Write the equations involved in the preparation of washing soda.

SECTION D 4 MARKS EACH

19. give an example of the metal which is:
    a) Liquid at room temperature.
    b) Can be cut easily with knife.
    c) Is best conductor of heat?
    d) Is the poorest conductor of heat?
20. draw the diagrams to show the magnetic lines of forces
    a) Straight current carrying conductor.
    b) Current carrying coil
    c) Solenoid.
21. Explain the construction and the ray diagram of the astronomical telescope.

22. Distinguish between the polar and the equatorial orbits. Which orbit is suitable for the geostationary satellite? Which orbit is suitable for the weather forecasting?
23. explain the construction and the working of the biogas plant

SECTION E 5 MARKS EACH

24. Draw the diagram of the heart and explain the double circulation.
25. Draw the diagram of the nuclear reactor and explain the construction with the function of all the parts.
26. Explain the manufacture of ammonia, with the equations and the diagram.
27. Explain the formation of the urine with the diagram of the nephron.

SAMPLE QUESTION PAPER 2

SCIENCE

SECTION A 1 MARKS EACH

1. The pH of three acids A, B and C are 5.0, 2.8 and 3.5 at same temperature. Arrange them in the increasing acidity.
2. What is concrete?
3. Light enters from air to glass having the refractive index of 1.5. What is the speed of light in glass?
4. The human eye can focus objects at different distances by adjusting the focal lengths of the eye lens. This is called what?
5. What are the phytohormones? Name any two.
6. What is a retrovirus?
7. Give the Kepler's law.
8. What is the mode of nutrition in fungi?
9. Define the point source of the water pollution.
10. Name any two materials which are used to make the solar cells.

SECTION B 2 MARKS EACH

11. What are short circuiting and the overloading?
12. from where do the following take in oxygen:
    a) prawn
    b) rat
13. Why the transportation of the materials is is necessary?
14. What is the resistance of a lamp which uses 20 A current when connected to the 220 V batteries?
15. What prevents us in making the use of the solar cells in our domestic purposes?

16. Draw the magnetic lines of the forces of the circular coil and the solenoid.

SECTION C 3 MARKS EACH

17. Which of the following is a slow and which is a fast reaction?
    a) setting of cement
    b) Formation of coal in the earth's crust.
    c) Reaction between the salts and acids.
18. Why are the images obtained from the Hubbles telescope is better than the telescopes from the ground?
19. Explain the environmental laws.

SECTION D 4 MARKS EACH

20. Nervous and the hormonal system together perform the function of the control and coordination in the humans. Justify the statement.
21. The radius of the sun is 7×10^8 meters. Its mean distance from the earth is 1.5×10^{11} meters. What is its angular diameter? The radius of the moon is 1740 km. its distance from the earth is 384000 km. what is its angular diameter? If the moon comes between the earth and the sun can it cover the sun? Why?
22. Explain the double fertilization with the diagrams.
23. Explain the digestion in humans.
24. give the full forms of:
    a) IUCD
    b) HIV
    c) OC
    d) AIDS

SECTION E 5 MARKS EACH

25. How do the embryological and the homologous organs provide the information of the evolution?
26. Draw the diagram of the female reproductive organs and explain the function of each.
27. Explain the construction and the working of the DC motor with the diagram.
28. Explain the preparation of sulphuric acid with the equations.

SAMPLE QUESTION PAPER 3

SCIENCE

SECTION A 1 MARKS EACH

1. What is the force that keeps the solar system together?
2. Why is it that we can see the solar corona only at the time of the total solar eclipse?
3. Cinematography makes the use of what out of accommodation, persistence of vision, bi focal lens system or least distance of the distinct vision?
4. Why is tungsten used exclusively for the filament of the lamps?
5. What is the other term of the extra cellular fluid?
6. List two Advantages of the vegetative propagation.
7. What is unisexual and bisexual? Give one example each.
8. What are the components of chromosomes?
9. State the function of epiglottis.
10. What is Ceres?

SECTION B 2 MARKS EACH

11. We wish to obtain a real, inverted image of the same size as that of the object by a thin convex lens of focal length 20 cm. where should the object be placed? Draw the ray diagram.
12. What are the functions of the liver and pancreas?
13. State the rule to find magnetic field produced around a current carrying conductor.
14. Name the receptors of the sound and light in the animals.
15. How can you make the balance between the environment and the development?
16. Compare the energy released by the fusion and the fission.

SECTION C 3 MARKS EACH

17. explain the process involved in the concentration of :
    i. Sulphide ores
    ii. Oxide ores
18. What is the cause of the fusion reaction?
19. Explain the choices of an ideal fuel.

SECTION D 4 MARKS EACH

20. Describe the menstrual cycle.
21. Explain the sexually transmitted diseases giving the example.
22. Explain Lamarckism.
23. Explain the liquid drop model.
24. Explain OTE.

SECTION E 5 MARKS EACH

25. Describe the types of the chromosomes with the diagrams.
26. Draw the diagram off the flower and explain each part.
27. Explain the first successful nuclear reaction with the diagram.
28. Explain the heating effect of Sulphur with the diagrams.

SECTION A 1 MARKS EACH

1. Give one example of the reaction which takes place instantaneously and one at the moderate rate.
2. Give the expanded form of DNA and RNA.
3. In which kind of the respiration more energy is released? Give the reason.
4. A lens used in the simple microscope has the magnification 6. Find its focal length?
5. What is ovulation?
6. Why the conductors of the appliances are are made of alloy rather than the metals?
7. State the rule to find the direction of the induced current and thus state it.
8. What is phototropism?
9. Define fertilization.
10. What is the size of the solar system?

SECTION B 2 MARKS EACH

11. Can we achieve the equilibrium between the water and its vapors in the open container? Justify your statement.
12. Name two metals which are found in the Free State in the nature.
13. A convex lens forms a real and the inverted image of the needle at the distance of 50 cm from the lens. Where the needle should be placed if the lens is convex so that the image is of the same size. Find also the power of the lens?
14. A compound microscope has the objective lens of focal length 1 cm and eye piece of 4 cm. if the tube is 20 cm, find the magnification?
15. Why should be a constant watch kept at the asteroids?
16. name the parts of the body responsible for the excretion in
    i. amoeba
    ii. earthworm

SECTION C 3 MARKS EACH

17. The heat produced by burning cow dung of mass 210 g is used to raise the temperature of water 50 g by $2^{o}C$. Find the calorific value of cow dung if the specific heat of eater is 4.2 $j/g^{o}C$
18. Give the method of the laboratory preparation of hydrogen.
19. Explain the green house effect and the global warming.

SECTION D 4 MARKS EACH

20. what is project Seti and what is a pole star?
21. Who provided the DNA as the genetic material? Write the names of the components of DNA. Draw the suitable diagram.
22. What is the cause of the energy released in the nuclear fission reaction?
23. Explain the construction of the solar cooker with their functions.
24. Draw the diagram of the parameters of the artificial satellite and explain them.

SECTION E 5 MARKS EACH

25. The refractive index of the mirror is 1.65 and that of alcohol is 1.36. Find the refractive index of the glass with respect to air? On what factors do the force experienced by the current carrying conductor depends when placed in the magnetic field? What is the colour of the star due to?
26. Draw the diagram of the alimentary canal of the grasshopper and explain it.
27. Draw the diagram of the manufacture of bleaching powder and explain it.
28. Explain the destructive distillation of petroleum with the diagram. Give one use of each product formed.

SAMPLE QUESTION PAPER 7

SCIENCE

SECTION A 1 MARK EACH

1. Why is the carbon rods used up in the extraction of aluminum?
2. How does the air reach every cell of the insect?
3. Name the reducing agent for the reduction of alumina and zinc blende.
4. What are the fabric filters?

5. What are the asteroids?
6. A person with the myopic eye cannot see the objects beyond 1.2 m. what should be the nature of the corrective lens?
7. What is the mode of nutrition in planaria?
8. What is nephrostrome?
9. What is the role of platelets?
10. What is the astronomical unit?

SECTION B 2 MARKS EACH

11. A satellite is orbiting the earth at the height of 2000 km. Compare the time period and the orbital velocity with that of the geostationary orbit.
12. Two lamps rated 100W and 60W are connected to the 220 V supply. Find the current drawn?
13. A heater is connected to the 220 V supply has the resistance of 150 ohm. How long will it take to heat 1 kg of water from $20^{o}C$ to $60^{o}C$?
14. write the equation of the reaction between:
    e) Iron and steam.
    f) Calcium and water
    g) Potassium with water.
15. What is soil erosion and what are its causes?
16. Rajesh's blood group is A, Sunil's is O and raja's is AB. Who can receive the blood from whom and who can donate the blood to whom? Give the reasons.

SECTION C 3 MARKS EACH

17. A 52 year old man wears the glasses with the power of – 5.5 D for distant viewing. His doctor prescribes the correction of + 1.5 D in his lens for the near vision. What are the focal lengths for the far viewing and the near viewing?
18. Explain the terms core, crust and mantle.
19. explain the Darwin theory

SECTION D 4 MARKS EACH

20. Explain USAB and sustainable development.
21. Explain the big bang theory.
22. During which division the chromosomes can be seen? Write the feature of the prokaryotic and the eukaryotic chromosomes.
23. Draw the labeled diagram of the male and the female organs of the flower.
24. Explain:

a) Hubble space telescope.
b) Milky way galaxy
c) Chandra X ray observatory
d) Photosphere

SECTION E 5 MARKS EACH

25. Draw the diagram of the neuron and explain the types of the nerves.
26. Draw the diagram of the human brain and give the function of each part.
27. Prove that the emergent ray is parallel to the incident ray.
28. Derive the lens formula