

ST.ARNOLD'S CENTRAL SCHOOL, PUNE
PERIODIC TEST-2, 2017-18
SUBJECT -SCIENCE

STD: IX

M.M:80

Section-A

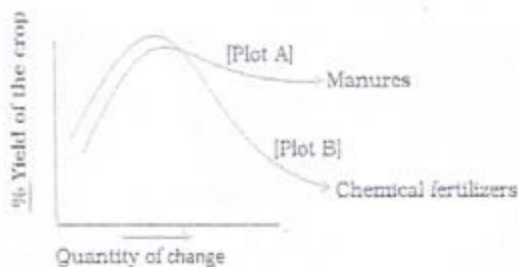
1. State Newton' first law of motion. (1)
2. Name two organelles in a plant cell that contain their own genetic material and ribosome. (1)
3. A bus decreases its speed from 80 km/h to 50 km/h in 4 s. find the acceleration of the bus. (2)
4. Which will cause more severe burns; steam or boiling water at same temperature and why? (2)
5. An Italian bee variety *A. Mellifera* has been introduced in India for honey production. Write about its merits over other varieties. (2)
6. A boy travels 3 km north and then 4 km east. What will be:-
 - a. The distance travelled by him?
 - b. The minimum distance he needs to go to reach his starting point.
 - c. The direction of his displacement. (3)
7. a. Define Inertia.
b. Give reasons:-
 - i. Why do we fall backward when a bus suddenly starts moving?
 - ii. Why some of the leaves may get detached from a tree if we vigorously shake its branch. (3)
8. A gun of mass 3 kg fires a bullet of mass 30g. The bullet takes 0.003s to move through the barrel of the gun and acquires a velocity of 100m/s. Calculate:-
 - a. The velocity with which the gun recoils.
 - b. The force exerted on gunman due to recoil of the gun. (3)
9. Draw a well labelled diagram of the following:-
 - a. Striated muscle fibre
 - b. Smooth muscle fibre
 - c. Nerve cell (3)
10. Based upon their function and structure, identify the following tissues:-
 - a. That connects muscles to bones
 - b. That stores fat.
 - c. That is connective tissue with fluid matrix. (3)

11. The figure below shows the two crop fields [Plots A and B] that have been treated with manures and chemical fertilizers respectively, keeping other environmental factors same. Observe the graph and answer the following questions.

(i) Why does plot B show sudden increase and then gradual decrease in yield?

(ii) Why is the highest peak in plot A graph slightly delayed?

(iii) What is the reason for the different patterns of the two graphs? (3)



12. a. Name the technique to separate a mixture of two or miscible liquids for which difference in boiling point is less than 25K.

b. Describe the structure of the column used in the above technique. Why is it used? (3)

13. Name the technique used for the separation of common salt and naphthalene.

Draw well labelled diagram. (3)

14. Swati's mother was suffering from cold and cough. Swati prepared tea for her mother. She boiled water in a pan, then she added tea leaves, sugar and milk to it. She filtered the tea in a cup and served to her mother.

i. Explain the values shown by Swati?

ii. Identify solute, solvent, residue and filtrate in this activity. (3)

15. A substance 'A' has fixed shape and volume. It is incompressible. Predict the state of the substance. Enlist four properties of this state of matter. (3)

16. a. Draw a velocity time graph for an object in uniform motion. Show that the slope of velocity time graph gives the acceleration of the object.

b. An aeroplane starts from rest with an acceleration of 3m/s^2 and takes a run for 35s before taking off. What is the minimum length of the runway and with what velocity the plane take off? (5)

17. a. State and explain Newton's second law of motion. Derive mathematical expression for it.
- b. An object of mass 100kg is accelerated uniformly from a velocity of 5 m/s to 10m/s, in 5s. Calculate the initial and final momentum of the object. Also find the magnitude of the force exerted on the object. (5)
18. a. Write a short note on meristematic tissue.
- b. Define the process of differentiation.
- c. Write two points of difference between simple tissue and complex tissue. (5)
19. a. Distinguish between hypotonic solution, isotonic solution and hypertonic solution.
- b. What are different types of endoplasmic reticulum? Write the functions of each. (5)
20. a. State one similarity and one difference between evaporation and boiling.
- b. Comment on following:-
- i. A wet handkerchief is placed on the forehead of a person suffering from high fever.
- ii. Wet clothes dry slowly during rainy season.
- iii. We see droplets of water on the outer surface of a glass containing ice cold water. (5)
21. a. What is colloidal solution and suspension? Explain with one example each.
- b. Give any three differences between element and compound. (5)

Section B

22. Differentiate between rusting of iron and dissolution of common salt. (2)
23. What happens when:-
- a. magnesium ribbon is burnt in the air.
- b. Copper sulphate is heated in a boiling tube. (2)
24. Four students were asked to add water to glucose powder, milk, soil, and sugar separately in four beakers. Classify the mixture as true solution, colloid and suspension. (2)

25. The spring balance used for measuring the minimum force required to pull a block is of range 0-1 kg weight and has total 100 divisions on its scale. What is its least count? (2)
26. In an experiment, 28g raisins were soaked in 50ml distilled water in a beaker. After 2 hours, raisins were taken out and weighed again. If the mass of wet raisins was 32g, then calculate the percentage of water imbibed by raisins. (2)
27. What do you understand by the term adulteration? State its harmful effects. (2)