

पुना International School

Shree Swaminarayan Gurukul, Zundal

Student Name	PA 3 Examination : 2021-22				
Date		Grade	9th	Roll No :-	Time: 90 min
Subject	Science	Teacher's Sign		Marks :- 50	

Note: 1) There are total (29) questions.

All questions are compulsory

Section A: 1 to 14 question (each question contains 1 mark)

Section B: 15 to 23 question (each question contains 2 marks)

Section C: 24 to 29 question (each question contains 3 marks)

SECTION-A

❖ MCQ BASED QUESTIONS

[14]

- Which one of the following is not a viral disease?
(a) Dengue (b) AIDS (c) Typhoid (d) Influenza
- Which one of the following is not a bacterial disease?
(a) Cholera (b) Tuberculosis (c) Anthrax (d) Influenza
- Which one of the following disease is not transmitted by mosquito?
(a) Brain fever (b) Malaria (c) Typhoid (d) Dengue
- Which one of the following disease is caused by bacteria?
(a) Typhoid (b) Anthrax (c) Tuberculosis (d) Malaria
- Which one of the following diseases is caused by protozoans?
(a) Malaria (b) Influenza (c) AIDS (d) Cholera
- The gravitational force between two objects is F . If masses of both objects are halved without changing distance between them, then the gravitational force would become
(a) $F/4$ (b) $F/2$ (c) F (d) $2F$
- In the relation $F = G \frac{M m}{d^2}$, the quantity G
(a) Depends on the value of g at the place of observation
(b) Is used only when the earth is one of the two masses
(c) is greatest at the surface of the earth
(d) Is universal constant of nature

8. The atmosphere is held to the earth by
(a) Gravity (b) wind (c) clouds (d) earth's magnetic field

9. The weight of an object at the centre of the earth of radius R is

- (a) Zero
- (b) Infinite
- (c) R times the weight at the surface of the earth
- (d) $1/R^2$ times the weight at surface of the earth

10. Two particles are placed at some distance. If the mass of each of the two particles is doubled, keeping the distance between them unchanged, the value of gravitational force between them will be

- (a) $1/4$ times
- (b) 4 times
- (c) $1/2$ times
- (d) unchanged

11. The chemical symbol for nitrogen gas is

- (a) Ni
- (b) N_2
- (c) N^+
- (d) N

12. The chemical symbol for sodium is

- (a) So
- (b) Sd
- (c) NA
- (d) Na

13. Which of the following would weigh the highest?

- (a) 0.2 mole of sucrose ($C_{12}H_{22}O_{11}$)
- (b) 2 moles of CO_2
- (c) 2 moles of $CaCO_3$
- (d) 10 moles of H_2O

14. Which of the following has maximum number of atoms?

- (a) 18g of H_2O
- (b) 18g of O_2
- (c) 18g of CO_2
- (d) 18g of CH_4

Section B

❖ **Directions Answer all of the following questions in 20 to 25 words** [2× 9= 18]

15. Name two diseases caused by Protozoans? What are their causal organisms?

16. Which bacterium causes peptic ulcers? Who discovered the above pathogen for the first time?

17. What is an antibiotic? Give two examples

18. Calculate the average density of the earth in terms of g , G and R
19. Suppose gravity of earth suddenly becomes zero, then in which direction will the moon begin to move if no other celestial body affects it?
20. The earth is acted upon by gravitation of Sun, even though it does not fall into the Sun. Why?
21. What is the fraction of the mass of water due to neutrons?
22. Does the solubility of a substance change with temperature? Explain with the help of an example
23. Calculate the number of moles of magnesium present in a magnesium ribbon weighing 12 g. Molar atomic mass of magnesium is 24g mol^{-1}

Section C

❖ **Directions Answer all of the following questions** **[3×6= 18]**

24. What do you mean by disease symptoms? Explain giving two examples?
25. Why is immune system essential for our health?
26. How does the weight of an object vary with respect to mass and radius of the earth. In a hypothetical case, if the diameter of the earth becomes half of its present value and its mass becomes four times of its present value, then how would the weight of any object on the surface of the earth be affected?
27. How does the force of attraction between the two bodies depend upon their masses and distance between them? A student thought that two bricks tied together would fall faster than a single one under the action of gravity. Do you agree with his hypothesis or not? Comment
28. The mass of one steel screw is 4.11g. Find the mass of one mole of these steel screws. Compare this value with the mass of the Earth ($5.98 \times 10^{24}\text{kg}$). Which one of the two is heavier and by how many times?
29. A sample of vitamin C is known to contain 2.58×10^{24} oxygen atoms. How many moles of oxygen atoms are present in the sample?