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Second Term Test

Grade 9

SCIENCE

Two Hours & 30 minutes

Part I

- Answer all the questions.
- Select the most suitable answer and underline it.

01. Organisms belong to which of the following group of micro – organisms can live even in extreme environments?

- (1) Protozoa (3) Fungi
(2) Bacteria (4) Algae

02. Protein food becomes unsuitable for consumption due to the growth of microorganisms on them. What do you call this condition?

- (1) Rancidification (3) Putrefaction
(2) Fermentation (4) Pasteurization

03. Which of the following species of bacteria is used as biological weapons?

- (1) Acetobacter (3) Lacto bacillus
(2) Rhizobium (4) Anthracis

04. Which of the following animal has the ability to see more areas separately using the each eye?

- (1) Cattle (3) Chimpanzee
(2) Man (4) Loris

05. Which of the following eye disease is caused due to denaturing of proteins in the eye and losing its transparency?

- (1) Glaucoma (3) Cataract
(2) Short Sightedness (4) long sightedness

06. Sound waves are carried from tympanic membrane to cochlea by,

- (1) Eustachian tube (3) Ear lobe
(2) Ossicles (4) Auditory nerve

07. Which of the following molecule does not contain oxygen?

- (1) Water molecule (3) Methane molecule
- (2) Glucose molecule (4) Carbondioxide molecule

08. Which of the following answer is correct regarding comparing the masses among sub atomic particles?

(1) Electron < Proton = Neutron

(2) Proton < Electron = Neutron

(3) Neutron < Electron = Proton

(4) Electron = Proton = Neutron

09. There are 11 protons and 12 neutrons in a sodium atom. Which of the following statement is correct regarding sodium?

(1) The atomic number of sodium is 12

(2) The atomic number of sodium is 23.

(3) The mass number of sodium is 11.

(4) The mass number of sodium is 23.

10. Which of the following statement is correct regarding an atom?

(1) An atom cannot be divided further

(2) An atom has a negatively charged nucleus in the middle.

(3) Large part of an atom is empty space

(4) An atom is bigger than a molecule.

11. Several statements are shown below.

A — has a magnitude

B — has a direction

C — has a point of application

D — no line of action

What are relevant regarding the physical quantity force out of them?

(1) Only A

(2) Only A and B

(3) Only A, B, and C

(4) Only A, B, C and D

12. A constant force acts perpendiculary on the areas of 2 m^2 , 3 m^2 , 4 m^2 , 5 m^2 . On which area the force acts the pressure will be maximum?

(1) 2 m^2

(2) 3 m^2

(3) 4 m^2

(4) 5 m^2

13. In between what chambers of the human heart is the mitral valve located?

(1) Between left atrium and right atrium.

(2) Between right atrium and right ventricle.

(3) Between left atrium and right ventricle.

(4) Between left ventricle and right ventricle.

14. Four features as P, Q, R and S are shown below.

P — thick walls

Q — valves are present

R — elastic

S — blood is carried away from the heart

What are relevant only for arteries?

(1) Only P and Q

(2) Only P, Q and R

(3) Only P, R and S

(4) All P, Q, R, S

15. Which of the following contains the pigment hemoglobin?

- (1) in red blood cells
- (2) in white blood cells
- (3) in platelets
- (4) in blood plasma

16. Which of the following component present in blood goes down abnormally in them?

- (1) plasma percentage
- (2) amount of white blood cells.
- (3) amount of platelets
- (4) amount of red blood cells

17. Which of the following statements is incorrect?

- (1) Capillary wall is unicellular.
- (2) Arteries remove blood from the heart.
- (3) Blood plasma contains water.
- (4) Venules join together to make arteries

18. Which of the following action takes place when the human upper arm is bent from the elbow joint?

	Biceps muscle	Triceps muscle
(1)	relax	relax
(2)	contracts	relax
(3)	relax	contracts
(4)	contracts	contracts

19. Which of the following substance helps for the rigidity of non – woody plants?

- (1) air
- (2) plant nutrients
- (3) water
- (4) growth substances

20. Birth of maggots from rotten meat is an example for,

- (1) theory of special creation.
- (2) cosmozoic theory.
- (3) theory of bio chemical evolution.
- (4) spontaneous generation theory.

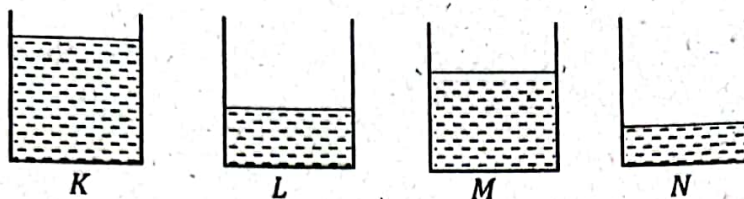
21. Which of the following answer expresses the correct order of biological evolution?

- (1) fish → amphibians → reptiles
- (2) fish → reptiles → amphibians
- (3) reptiles → amphibians → fish
- (4) reptiles → fish → amphibians

22. Regarding which of the following animal have been enough fossil records to study the complete evolutionary history?

- (1) man
- (2) tortoise
- (3) horse
- (4) dog

23. The diagrams below show how equal masses of four liquids K, L, M and N are in four identical vessels



Which of the following answer shows correctly the ascending order of the density of these liquids?

- (1) $K < L < M < N$ (3) $N < L < M < K$
 (2) $K > M > L > N$ (4) $N < M < L < K$
24. Beaks of birds are adapted in various ways. due to this,
- (1) The competition for protection is decreased.
 (2) The competition for food is decreased
 (3) The competition for habitats is decreased.
 (4) All of the above take place.
25. Consider the following statements P, Q, R and S
- P – deforestation R – environmental pollution
 Q – localization of invasive organisms S – in-situ conservation
- Out of the above statements, what statements, are responsible for the reduction of bio – diversity?
- (1) only P (3) only P, Q and R
 (2) only P and Q (4) only P, Q and S
26. Which of the following name is used to introduce grasslands in low country dry zone created as a result of chena cultivation?
- (1) Wet patana (3) Talawa
 (2) Dry patana (4) Damaṇa
27. Due to usage of organic fertilizer, soil,
- (1) structure is improved
 (2) increases the action of soil microorganisms
 (3) increases the ability of retaining water
 (4) all of the above take place.
28. Two statements are shown as A and B .
- A - Increasing global warming is a main environmental problem seen in the present.
 B - The main reason for increasing the global warming is increasing the concentration of green house gases.

Out of the above statements,

- (1) A is correct and B is incorrect. (3) Both A and B are correct
 (2) A is incorrect and B is correct (4) Both A and B are incorrect

29. Which of the following step is the main step of decreasing the carbon foot step?

- (1) Usage of individual motor vehicles.
- (2) Usage of light air planes for interior transportation.
- (3) Usage of bicycles for short travels
- (4) Usage of individual motorcycles.

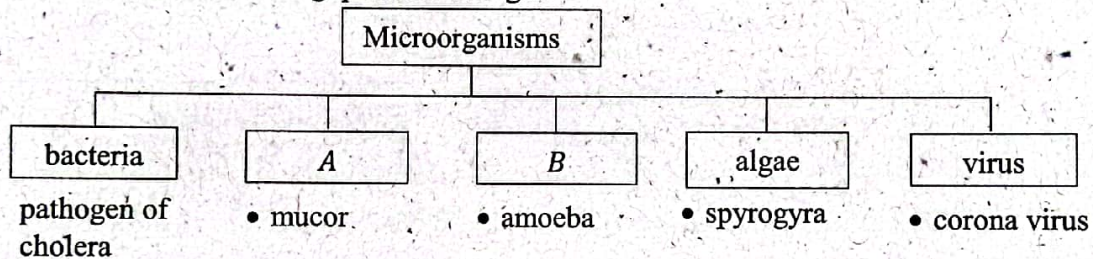
30. Due to consumption of which of the following substance, the food mile related to your house is maximum?

- (1) Vegetables obtained form the home garden.
- (2) Dhal imported form India.
- (3) Dried fish brought from Chillaw.
- (4) Rice brought from Ampara.

Part II

- Answer question no.1 and 4 more questions.

01. (A) A diagram including groups of microorganisms and one organism belong to them is shown below. Answer the following questions using it.



- (i) Name the two groups of microorganisms shown as A and B.
- (ii) Name a group of microorganisms that unicellular as well as multi cellular organisms can be observed.
- (iii) What is the group of organism that has the ability of photosynthesis?
- (iv) To which group does paramecium belong?
- (v) Mention,
 - (a) a useful instance
 - (b) an instance of not usefulthe organisms in group bacteria.
- (vi) Mention the only living characteristic shown by virus.

(B) There are many uses of microorganisms. Mention one usage of microorganisms in the following fields.

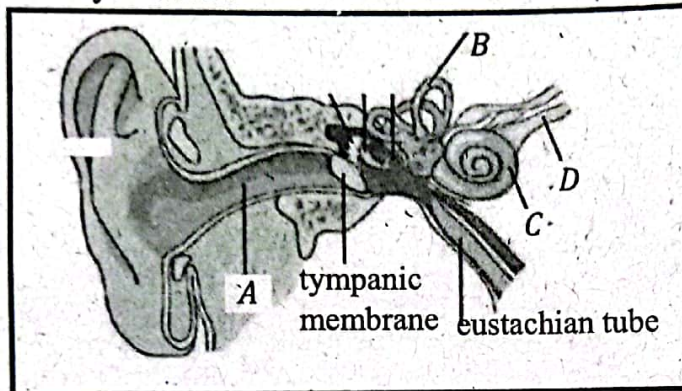
- (i) Medical field
- (ii) Agricultural field
- (iii) Industrial field

(C) Decomposition (being rotten) takes places due to the intervention of microorganism. This process is very useful for the survival of organisms. Explain this scientifically.

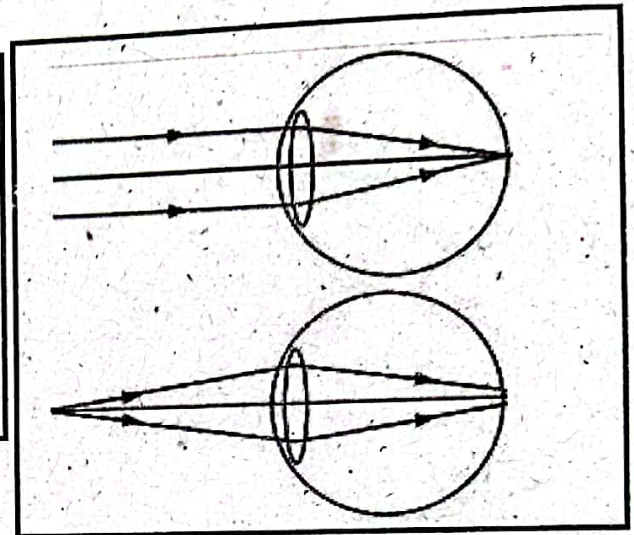
(D) Food spoilage is a harmful effect of microorganisms.

- (i) Mention two observations that prove the growth of microorganisms on food.
- (ii) Mention two effects of food spoilage.

02. (A) The diagram (1) below shows the structure of human ear. The diagram (2) shows a picture related to an eye defect.



(1) diagram



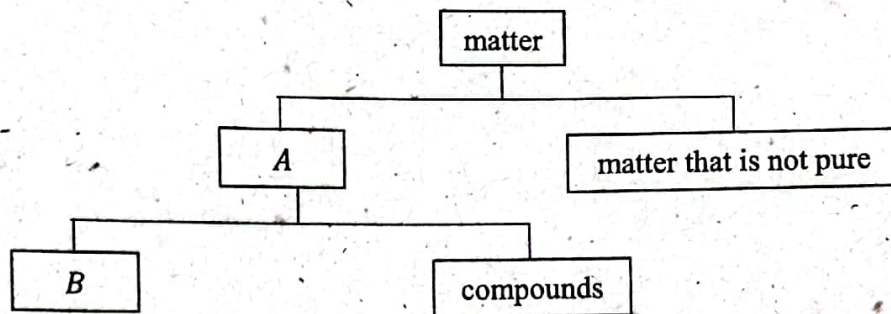
(2) diagram

- (i)
 - (a) Name the parts shown as A, B, C, D in the diagram (1)
 - (b) What is the function done by the Eustachian tube?
 - (c) What is the part shown in the diagram (1) that helps to maintain the balance of the body?
- (ii)
 - (a) What is the eye defect explained by the diagram (2)
 - (b) Mention one reason that affects for this eye defect.
 - (c) What is the remedy for this defect?

(B) Bones muscles and certain substances (water) are important for the movements and rigidity of animals.

- (i) Which of the above mentioned things help for the movements of the following groups of animals.
 - (a) invertebrates
 - (b) vertebrates
- (ii) Which of the above mentioned things in the paragraph, help for the rigidity of the following animals?
 - (a) earth worm
 - (b) gecko

03. Matter can be classified as follows.



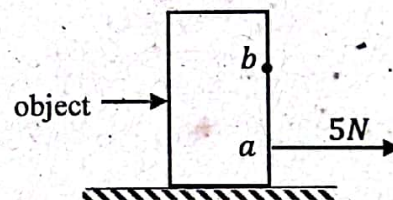
- (i) Name the parts A and B shown in the diagram.
- (ii) Write an example for the matter that is not pure.
- (iii) Mention the standard symbols of the following substances belong to part B
 - (a) carbon
 - (b) gold
- (iv) Mention the things present in following substances separately that come under B
 - (a) water
 - (b) sodium chloride
- (v) How a substance comes under B is demonstrated is shown below.



- (a) Mention the number of protons and neutrons present in an atom of Al respectively.
- (b) What is shown here as 27?
- (vi) What is the hetero atomic molecule out of NH_3 and Cl_2 ?

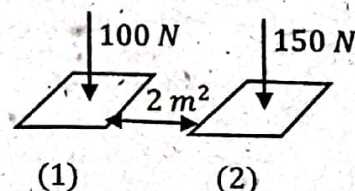
04. (A) The diagram below shows how a horizontal force acts on an object. Then, the object moves towards the horizontal force.

- (i) What are related to the force shown by 5N and "a"?
- (ii) Mention the condition that can cause when the force is applied horizontally along the point b.
- (iii) How the direction of force is represented in the diagram?
- (iv) What is the laboratory instrument used to measure the force?



(B) The force exerted perpendicularly over a unit area is known as pressure.

- (i) Write the equation used to express pressure.
- (ii) Mention the international standard unit used to measure pressure.
- (iii) The diagrams (1) and (2) below show how forces act on an area of 2 m^2 in two instances.
 - (a) In what instance will a higher pressure be exerted?
 - (b) (i) How can the force exerted by a constant force be decreased?
 - (ii) Give an example for such an instance.
- (iv) A strong thread can be used to cut soap. Here using a thin thread is more suitable than using a thick thread. Explain this scientifically.



05. (A) The diagram below shows how the components in human blood is classified.

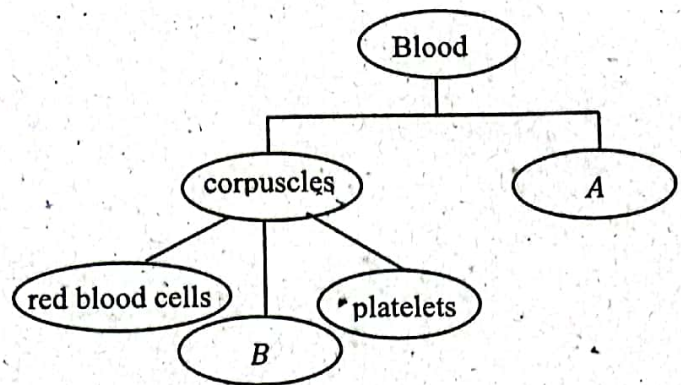
(i) Name the parts A and B shown in the diagram.

(ii) Write two transporting functions done by A.

(iii) Name the kind of corpuscles that do the following functions.

(a) Transporting oxygen from lungs to body tissues.

(b) Helping to coagulate blood.



(B) (i) Mention the type of blood group that can be transfused to the following recipients when both rhesus factor and blood groups are matched.

(a) A⁺

(b) O⁻

(ii) What do you call the disease condition occurred when the blood groups of recipient and donor are incompatible.

(C) There are two types of blood vessels as the blood vessels that carry blood to the heart and the blood vessels that carry blood away from the heart. Name the blood vessel/ vessels suitable for the following instances.

(i) Removing blood from the heart to send to the lungs.

(ii) Removing blood from the heart to send to other body tissues other than lungs.

(iii) Carrying blood to the heart from superior areas like head neck and upper limbs.

(iv) Carrying blood from lungs to the heart.

06. (A) (i) The diagram below shows a density bottle. There is a fine hole in its lid.

A certain liquid is filled after removing its lid. when the lid is closed the density bottle contains 25 cm³ of volume of liquid correctly in it and its lid. An activity was done using this. The steps of the activity and the readings obtained are shown below.

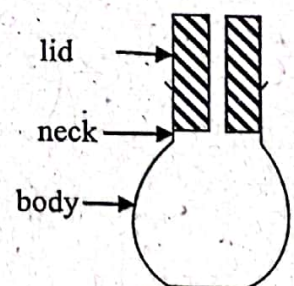
- Obtaining the mass of the empty bottle-with its lid -- 22 g
- Fill the bottle with water, close the lid and drying its outer cover and obtain the mass--47g

Answer the following questions using the above readings.

(a) What is the mass of water filled in the bottle and its lid?

(b) What is the volume of water filled in the bottle and its lid?

(c) What is the density of water related to the answers (a) and (b) above?



(ii) Out of the milk samples A and B, enough amount of water is added to one of it. How can you identify the milk sample mixed with water using the model hydrometer prepared by you in the school? Explain.

(B) (i) Plants do various movements as responses to changes in the environment. Name the following plant movements shown as (a), (b) and (c).

(a) Plant stem growing towards the light

(b) Shrinking of leaves of Kathurumurunga, Tamarind like Leguminose plants when dark falls.

(c) Clinging of the coiling of tendrils in passion fruit with the support.

(ii) Mention one difference between tropic movement and nastic movement.

07. (A) The observations noted by a group of students who did a field study in a forest are shown below.

- located in areas up to 900 m from the sea level.
- vegetation can be seen as layers.
- annual rainfall is above 2000mm

(i) (a) According to the above observations, to what type of forest does this forest belong?

(b) Write an example for this type of forest.

(c) Write two importances of the forest you mentioned above (a).

(ii) Forests are an example for natural ecosystems. Mention how (a) and (b) below take place in an ecosystem.

(a) flowing energy

(b) flowing materials

(B) (i) Name an artificial eco system.

(ii) Write two ways how this artificial eco system differs from a natural eco system.

(C) Write an example for each of the following relationships described as (i), (ii), (iii) that can be observed in an eco system.

(i) living - living

(ii) living - non living

(iii) non living - non living

(D) What acts as the primary source of energy in an eco system?



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