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முழுப் பதிப்புரிமையுடையது  
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| <p><b>බස්නාහිර පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව</b><br/> <b>மேல் மாகாணக் கல்வித் திணைக்களம்</b><br/> <b>Department of Education - Western Province</b></p> |   |  |   |
| <p><b>වර්ෂ අවසාන ඇගයීම</b><br/> <b>ஆண்டிறுதி மதிப்பீடு</b> - 2019<br/> <b>Year End Evaluation</b></p>   |   |  |   |
| <p>ශ්‍රේණිය } 09<br/>                 தரம் }<br/>                 Grade }</p>   | <p>විෂය }<br/>                 பாடம் } Science<br/>                 Subject }</p> | <p>පත්‍රය }<br/>                 வினாத்தாள் } I, II<br/>                 Paper }</p> | <p>කාලය }<br/>                 காலம் } 02 hours<br/>                 Time }</p> |

Name :- ..... Index No :- .....

**Consider:**

- Answer all the questions on part I.
- Answer only 5 questions including the first question on part II.

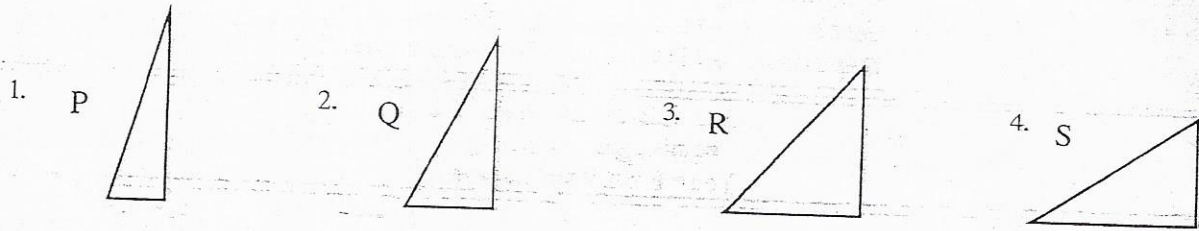
**Part - I**

01. What is the common feature both protozoans and bacteria?
  1. Multicellular
  2. Living only in aquatic environment
  3. Have cilia for locomotion
  4. Unicellular
  
02. Which disease condition is prevented by using attenuated micro – organisms for vaccination.
  1. Tetanus
  2. Diphtheria
  3. Hepatitis B
  4. Polio
  
03. What is the instance where blood clotting is possible?
  1. Donating B<sup>+</sup> blood to a person with B<sup>-</sup> blood.
  2. Donating B<sup>-</sup> blood to a person with B<sup>+</sup> blood.
  3. Donating B<sup>-</sup> blood to a person with B<sup>-</sup> blood.
  4. Donating B<sup>+</sup> blood to a person with B<sup>+</sup> blood.
  
04. Which of the following shows a method of increasing pressure.
  1. Lower part of a nail is pointed.
  2. Arms of the school bags are made broad/Wide.
  3. Fixing higher number of tyres some vehicles
  4. Foot of shoes are made roughly with grooves

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05. The figures given below depicts 4 inclined planes with equal length and same nature of surface nam P, Q, R, S If those are used to lift the same object up, Which inclined plane will give the least mechanic advantage.



06.  $^{23}_{11}\text{Na}$

What is the number of neutrons in a sodium atom according to this

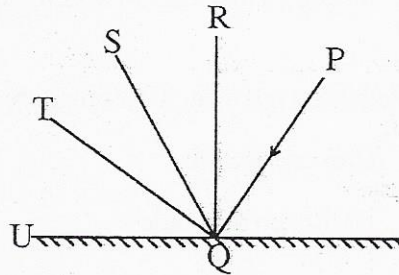
1. 11
  2. 12
  3. 23
  4. 34
07. Pathogen for Malaria is a,
1. Virus
  2. Insect
  3. Bacteria
  4. Protozoan
08. Which response includes the functions of semi-circular canals and Eustachian tube respectively.
1. Maintain body balance, controls the pressures on either sides of the tympanic membrane
  2. Maintain body balance, Direct the sound to tympanic membrane
  3. Controls the pressure on either sides of the tympanic membrane, Directs the sound to tympanic membrane
  4. Transmit auditory sense to, the auditory - nerve, controls the pressure on either sides of the tympanic membrane
09. Choose the most accurate response about graphene used in Nano technology
1. A single layer taken from the multilayered structure in graphite.
  2. A substance made by mixing graphite and diamond.
  3. Molecule made by arranging 60 C atoms as a ball.
  4. The multi-layered structure in graphite is call graphene.
10. Which response shows a heterogenous and a homogeneous mixture respectively?
1. Aqueous salt solution, Aqueous sugar solution
  2. Aqueous salt solution, clay dissolved water
  3. Clay dissolved water, Aqueous sugar solution
  4. Clay dissolved water, Ice-cream

11. What is the theory which has been proven scientifically about the origin of life on earth.

- |                                      |                                  |
|--------------------------------------|----------------------------------|
| 1. Theory of natural creation.       | 2. Cosmozic Theory               |
| 3. Theory of bio-chemical evolution. | 4. Spontaneous generation theory |

12. What is the correct path of emergence of the light ray PQ incident plane mirror.

1. QR
2. QS
3. QT
4. QU



13. Which substance contains homoatomic molecules.

- |             |                   |
|-------------|-------------------|
| 1. chlorine | 2. Water          |
| 3. Helium   | 4. Carbon dioxide |

14. Examples for rocks

- |                         |                       |
|-------------------------|-----------------------|
| 1. Limestone and quartz | 2. Gneiss and Granite |
| 3. Illmanite and Quartz | 4. Rutile and zircon  |

15. Which of the following is not a common feature for plants naturally grown in montane forests

- |                         |                                |
|-------------------------|--------------------------------|
| 1. Dwarf (Short) plants | 2. Top of the plant is flatten |
| 3. Having high stems    | 4. Having twisted stems        |

16. What is the response with positively charged and neutral type of particles within the nucleus respectively?

- |                     |                      |
|---------------------|----------------------|
| 1. Electron, Proton | 2. Proton, Electron  |
| 3. Proton, Neutron  | 4. Neutron, Electron |

17. Element which is included both glucose and ammonia is,

- |             |             |
|-------------|-------------|
| 1. Nitrogen | 2. Carbon   |
| 3. Oxygen   | 4. Hydrogen |

18. For Nano technological explorations,
1. Particles of 1 nm to 10nm scale are used.
  2. Particles of 1 nm scale are used.
  3. Particles of 1 nm to 1000nm scale are used.
  4. Particles of 1 nm to 100nm scale are used.
19. What is the gas which is considered to be absent in the earliest atmosphere of earth
1. Carbon dioxide
  2. Methane gas
  3. Hydrogen Sulphide
  4. Oxygen
20. Select the incorrect statement regarding thunder
1. Activation of thunder is high during intermonsoon periods.
  2. Cumulus clouds has the highest contribution for occurrence of lightening.
  3. Flowing of charges from a cloud to earth is called cloud to cloud lightening.
  4. Instantaneous flow of a large electric current takes place in lightening.

(20 x 2 = 40 marks)

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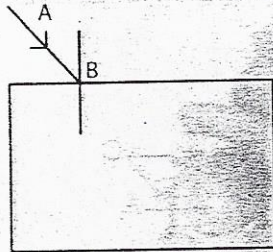
## Part - II

## Instructions :

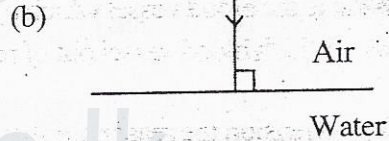
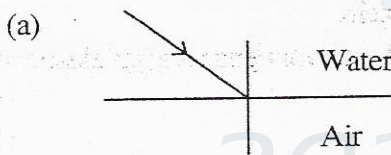
- Answer only 5 questions including the First question.

(01) Followings are some steps followed by a group of grade 9 students in a practical regarding refraction of light

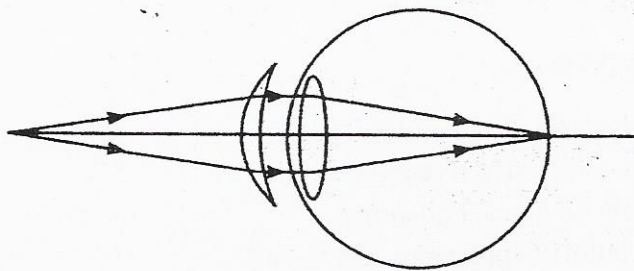
- ★ Marking the location of a glass block kept on a white paper.
- ★ Drawing the following figure using a light ray AB directed towards the glass block.



- Copy the above diagram on your answer sheet and draw the path of the light ray of AB through glass block and how it emerges. (2 marks)
- Mention 2 situations experienced in day-to-day life caused due to refraction of light. (2 marks)
- Copy these figures and complete the path of light rays. (2 marks)



- Explain what is called "Focal point" of a convex lens using a ray diagram (2 marks)
- The given figure depicts an instance where treatment is done for an eye disease. Answer the questions given below using it.

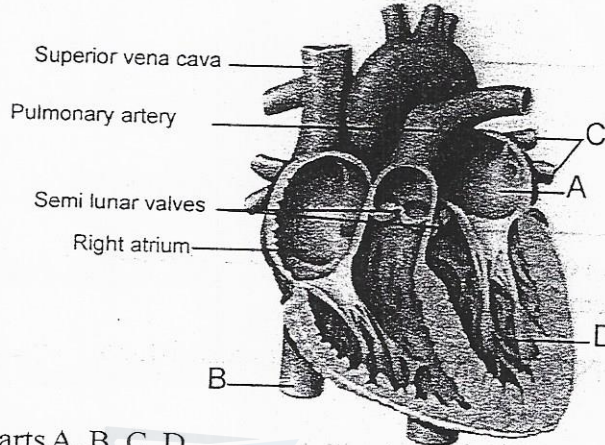


- What is the error / disease which is treated here. (1 mark)
- What type of lens is used to treat this condition? (1 mark)
- Which objects become unclear to this person before treatment? (Near objects or far Objects?) (1 mark)

- (vi) Write a law of reflection of light (2 mark)
- (vii) Fill in the blanks using the relevant part/Structure of the eye relevant for the given function. (3 marks)

| Function  | Relevant Structural part |
|---|--------------------------|
| 1. Providing blood supply to the eye                | a. ....                  |
| 2. Controlling the curvature of the eye lens.       | b. ....                  |
| 3. Controlling the amount of light entering the eye | c. ....                  |

(02) Answer the given questions using the longitudinal section of a human heart show below.

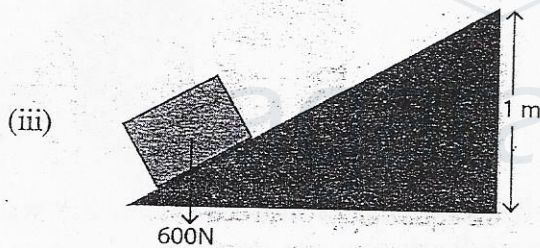


- (i) Name the parts A, B, C, D. (2 marks)
- (ii) What is the location of the bicuspid Valve (Give the location according to the chambers of heart on either sides of it) (1 mark)
- (iii) What is the blood vessel which opens to the left ventricle. (1 mark)
- (iv) (a) Which blood vessel out of pulmonary artery and superior venacava has elastic walls? (1 mark)
- (b) Mension the reason for that. (1 mark)
- (v) State the functions of following blood cells (2 marks)
- (a) Write blood cells
- (b) Red blood cells
- (vi) Following are some materials transported through blood. Name the blood component assisted in transportation of each of them. (3 marks)
- (a) Minerals and Vitamins
- (b) Oxygen
- (c) Excretory products

- (03) A force can be simply defined as a pull or a push.
- (i) Why force is considered as a vector quantity. (2 marks)
- (ii) State an example for a scalar quantity. (1 mark)
- (iii) What is called point of application of a force? (1 mark)
- (iv) What is the Standard unit of measuring weight? (1 mark)
- (v) Mension the 2 factors affecting for the pressure exerted on a surface by a solid object. (2 marks)
- (vi) A cuboid shaped objects is hit on a wall by a force of 300N. If the pressure generated on the wall is 150 Pa, calculated the surface area of the box which is contacted with the wall. (2 marks)
- (vii) The foot of shoes used by the ice skaters are made as knife blades. Explain the reason for this using the principle of pressure. (2 marks)

- (04) There are several types of natural disasters affected for humans. The destruction caused by Tsunami, cyclones out of them is enormous. Scientists says that increasing global warming causes increment in cyclones.
- Name 2 natural disasters faced by man other than tsunami, cyclones and earth quakes. (1 mark)
  - Explain how a cyclone is generated using pressure. (2 marks)
  - From which coast out of northern, eastern, western, southern does most number of cyclones enter in to the country. (1 mark)
  - Mention 2 greenhouse gasses contributing global warming. (1 mark)
  - Name 2 natural causes which generates tsunami. (2 marks)
  - Name an environmental factor which can contribute to decrease the speed of tsunami waves. (1 mark)
  - Explain how a earth quake is occurred using the nature of earth's crust. (2 marks)
  - State a human activity which may cause for an earth quake. (1 mark)

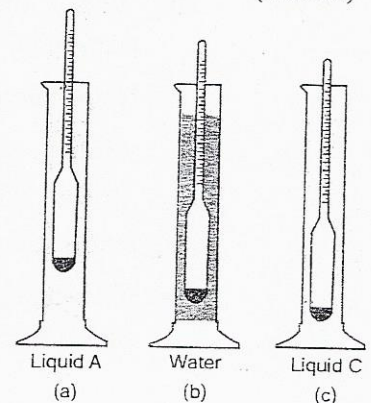
- (05) (A) (i) Simple machines such as levers, Inclined planes, pulleys, wheel and axel are used to make our day to day activities much easier.
- Cutting arecaunt using the nutcracker.
  - Unscrewing a nail using a screw driver
  - Fishing using the fishing a crowbar.
  - Lifting a stone using a crowbar.
- Write the simple machine used in above situations. (a, b, c and d) (2 marks)
- (ii) Give examples for each first type and third type levers. (2 marks)



- The above figure depicts an instance where a wooden plank is used as an inclined plane to lift a 600N Weight so a 1m height using a 200 N force. (1 mark)
- What is the mechanical advantage of the inclined plane. (1 mark)
  - Calculate the velocity ratio if the length of the inclined plane is 4m? (1 mark)
  - Find the efficiency of the inclined plane (1 mark)

- (B) A figure is presented for an instance where 3 equal hydrometers are immersed in 3 measuring cylinders with equal volumes of 3 types of liquids.

- State with reason whether the density of liquid A is greater or less than that of water (3 marks)
- What is the liquid with least value of density of the 3 liquids given above. (1 mark)



Grade 9 - Science - Western Province

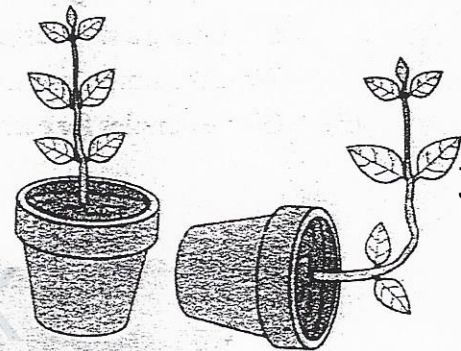
(06) The chemicals regulating the growth of a plant are called as plant growth substances.

- (i) There are several substance which promotes the growth of plants. One of them is Auxin. Mention 2 Other such substance (2 marks)
- (ii) Name a type of naturally found auxin in plants (1 mark)
- (iii) Some plants start branching when the shoot apex is cut. Explain this situation using the plant growth substance (2 marks)
- (iv) Which type of movement out of Nastic and Tropic movements have an effect on plant growth substance. (1 mark)
- (v) Answer the questions given below using the following movements.
- \* Leaves of Sesbania/“Kathuru murunga” sleeps with the fall of darkness/decrease of sunlight.
  - \* Coiling of tendrils in passion fruits with the support.
  - \* Movement of plant roots towards water source.
  - \* Leaves of Mimosa plant sleeps in a shock.
- (A) Mention 2 Nastic movements. (2 marks)
- (B) Name structure in Mimosa leaflet, which is important to show above movement. (1 mark)

(vi) Mention the reason why the erectness of stem of balsom plant is lost when water becomes deficient (1 mark)

(vii) What instance given below is demonstrated in the figure above? (1 mark)

- Negative geotropism shown by shoot apex.
- Negative geotropism shown by plant root.
- Negative phototropism shown by shoot apex.



(07) Every organism contributes widely in maintaining the equilibrium of an eco-system. The changes made by man in natural eco-systems have resulted in bringing out adverse effects.

- (i) Write 2 examples for natural eco-systems (2 marks)
- (ii) There are 3 types of man made eco-systems. One of them is the agricultural eco-systems. Mention the other 2 types (2 marks)
- (iii) One section of the agricultural environments maintained due to need in food is crop cultivation what is the other type. (1 mark)
- (iv) What is the type of grass lands found in low country dry Zones arised as a result of chena cultivation? (2 marks)
- (v) Name the type of forest relevant to the description given below (1 mark)
- “Can be seen in not much arid, dry zone in Sri Lanka A long drought season is observed from May to September. Have abundant “Palu”, “Burutha”, “Hamilla” plants.
- (vi) State a main problem arised in man made eco-systems at present (1 mark)
- (vii) “Generating electricity through solar panels helps in controlling global warming” Do you agree with this? Why? (2 marks)