

S.2 END OF TERM I ASSESSMENT 2023

PHYSICS

TIME: 2 hours

INSTRUCTIONS: Answer all the questions In spaces provided

SECTION A

1. Musa dropped a jack fruit of mass 2500g in water tank, the volume of water increased from $90,000\text{cm}^3$ to $143,000\text{cm}^3$. Answer the questions that follow.

What method is he using and why?

.....
.....(02)

What instrument was used to give the mass value of jack fruit?

.....(01)

Determine the density of the jack fruit in g/cm^3

.....
.....
.....(02)

2. i) With two examples from each define the following terms

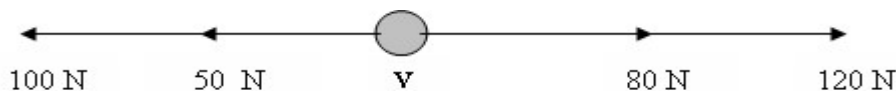
a) Contact forces:.....
.....

Examples, (02)

b) Non-contact forces:.....
.....

Examples, (02)

- ii) Find the resultant force acting on the body below




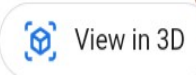
.....

.....
.....(02)

3. a) Space is said to have vacuum, the Sun's heat reaches the surface of the earth by a certain process called(01).

b) Name any two process of heat transfer that exist besides one mentioned above
.....,(02)

4. Study the image below and answer questions below.

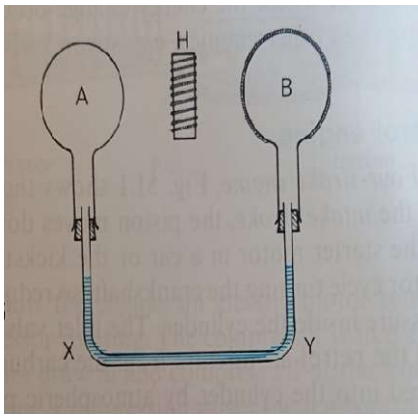
From NASA		Orbital period: 687 days
Mars		Distance from Sun: 227.9 million km
 View in 3D		Length of day: 1d 0h 37m
		Gravity: 3.721 m/s ²
		Radius: 3,389.5 km
	Temperature: 209 K	

a) What is the distance from the sun in standard form?
.....(01)

b) Find the temperature of Mars in Degree Celsius?
.....
.....(02)

c) Given a body has a weight of 1500N on Earth, find its weight on mars if its transferred there.
.....
.....
.....(03)

5. Figure below shows an electric heater placed mid-way between two flasks A and B. A is shiny on the outside and B is blackened on the outside.



With a reasons explain what happens to the liquid in tube XY.

.....

.....

.....

.....

.....

6. When a car is parked out-side for(03)
gets very hot inside, why is it so?

.....

.....(02)

7. a)Name any two natural and artificial sources of light you ever seen or used

Natural sources	Artificial sources

(02)

- b) Name and explain formation of any one-type of eclipse that you know

.....

.....

.....

.....(03)

- c) A pin-hole camera of length 25cm is used to view an object of height 8m at a distance of 100m away from the pin-hole.

What is the nature of the image formed?

.....(01)

Calculate the size of the image formed

.....

.....

.....(02)

d) State the law of reflection of light and use to explain why you can't see objects in a dark room?

.....

.....

.....

..... (02)

8. a) Explain why metal lid on glass jar can be unscrewed easily if the jar is inverted for a few seconds with the lid being dipped in very hot water? (02)

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.....

.....

b) From the figure below, answer the questions that follow.

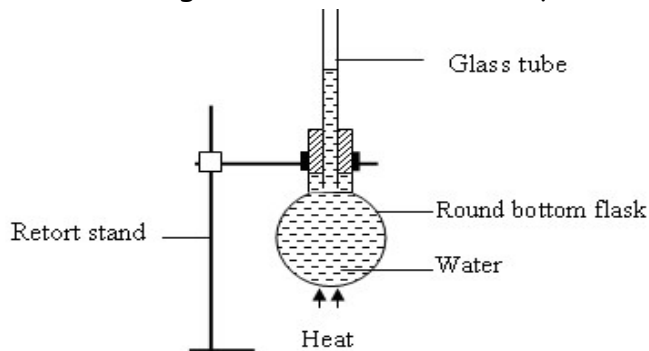


Figure 15.7

State and explain what happens to the liquid in the figure above. (02)

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.....

.....

c) Explain the meaning of the statement unusual expansion of water and hence sketch a graph of volume against temperature. (03)

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.....

.....

Graph

.....

.....

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.....

.....

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-
- d) The distance between the lower and the upper fixed points on the Celsius scale in unmarked mercury-in- glass thermometer is 25cm. If the mercury level is 5cm below the upper fixed point, find the temperature. (02)
-
-
-

9. a) with help of ray diagrams distinguish between the Regular and irregular reflection of light
-
-
-
-
-(02)

10. In figure 15.13 below, answer the questions that follow.



Figure 15.13

Why does this happen?

.....

.....

.....(02)

Redraw to show what happens when it is heated

With a diagram explain how a vacuum flask can keep hot water hot.

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END

