

Write short answers to any (15) questions from Q.No 1, 2 and 3 and attempt any two questions from

Part II. Write same question number and its part number as given in the question paper.

2 x 15

Define Nuclear Physics and Plasma Physics.

What are the Significant Figures?

What is the difference between Base Units and Derived Units?

Differentiate between Rest and Motion.

Define Average Velocity and Uniform Acceleration?

Write two advantages of Friction.

Why the Friction in the human joints is much reduced?

What is meant by Rectangular Components and Resolution of Vectors?

What is Moment Arm and what is its effect on Torque?

While opening the nut where we hold it so that small force have to apply?

Why the outer edge of the road is made high than inner edge at corner?

Define Centrifuge. On what principle it works?

What do you mean by Potential Energy? Write its formula.

Calculate Potential Energy of a body of mass 0.25 kg at a height of 10 m from earth.

Why the Mechanical Advantage of Inclined Plane is always greater than 1?

What is Pressure? Write its formula.

What is Surface Tension? What is its relation with temperature?

State Pascal's Law and write its formula.

Keeping pressure constant and doubling the temperature of a $2m^3$ gas enclosed in a cylinder. What will be its volume of Gas?

What is Boyle's Law? Write its formula.

What is Radiation? Write its use in daily life.

What is the effect of temperature in the expansion of Solid Bodies?

Explain the Observation and Hypothesis.

(ب) ایک کار کا ماس 500 kg گرام ہے۔ اسے 20 سیکنڈ میں ریسٹ پوزیشن سے $40ms^{-1}$ کی دلائی تک لے جانا ہے۔ اس کیلئے کتنی فورس درکار ہوگی؟

The mass of a car is 500 Kg. In order to raise its velocity from rest to $40ms^{-1}$ in 20 seconds, how much force will be required?

سوال نمبر 5 (الف) سنٹر آف گریوٹیٹی سے کیا مراد ہے؟ کسی پتہ پر قاعدہ جسم کا سنٹر آف گریوٹیٹی کیسے معلوم کیا جاتا ہے؟

Define Centre of Gravity. How a irregular body's Centre of Gravity can be found?

(ب) ایک آری کو کلکٹری کے ٹکڑے میں آگے پیچھے حرکت دینے کے لئے 40N کی فورس درکار ہے۔ اگر آپ اس آری کو 30 دفعہ کلکٹری میں 12 cm تک آگے اور 12 cm تک پیچھے حرکت دیں تو کل کتنا ورک کرنا پڑے گا؟

A Saw required a force of 40 N to move to and fro through a piece of wood.

If you move the saw through the wood 30 times, 12 cm forward and 12 cm backward, how much work will be done?

سوال نمبر 6 (الف) حرارت خصوصیت کی تعریف کریں اور اس کی مساوات اخذ کریں۔

(ب) 10 m سمں میں 10 گہرائی پر ایک غوطہ خور پر پانی کا پریشر معلوم کریں۔ جبکہ سمندری پانی کی ڈینسٹی $1030 Kgm^{-3}$ ہو۔

Find the water pressure on a deep sea diver at a depth of 10 m where the density of sea water is $1030 Kgm^{-3}$.