QUESTION BANK APPLIED PHYSICS (FOR ME)

Q. 1QUESTIONS FOR TWO MARKS.

A) Define 1) Displacement 2) Rectilinear motion 3) Velocity 4) Acceleration

B) State three equations of motion when a body is freely falling due to gravity.

C) What is the relation between angular velocity & linear velocity?

D) Define impulse & impulsive force.

E) Define Newton's third law & give one example.

F) Define 1) Work 2) Power 3) Energy

G) Define K. E. & P. E. and state the equation.

H) Define 1) Projectile motion 2) Velocity of Projectile.

I) Define Ultrasonic waves & state its frequency range.

J) What is meant by NDT?

H) A body is thrown vertically upwards with an initial velocity of 30 m/s. Find the maximum height reached by the body.

I)A ball is thrown vertically up. It falls back to ground after 2 sec. Find the height reached by it.

K) State Newton's second law of motion.

Q. 2 QUESTIONS FOR THREE MARKS.

A) State three advantages of Non-Destructive testing of material.

B) State three factors on which NDT method can be selected.

C) Define centripetal & centrifugal force give one example of each.

D) Define maximum height & range of projectile with formula symbol and meaning.

E) How many liters of water can be raised in 15 min. to a height of 24m by using a pump of 12 KW.

F) A bullet of mass 100 gm is fired with a velocity of 400 m/s from a gun of mass 10 kg. Find the velocity with which gun will recoil.

G) An object is projected upward making an angle of 40^0 with the horizontal with an initial speed of 50 m/s 1) How far the point of projection will the object strike. 2) In how many seconds will object reach the ground.

H) A train weighing 2000 KN is running at a speed of 36 Km/hr. The train is brought to rest in 60 m. What is the resistance per kilo newton weight of the train.

I) Find the momentum of the train moving at 100 Km/hr, if its weight is 3000KN

Questions for 4 marks.

a) Describe LPT method with its principal and experimental procedure.

b) What is recoil velocity of gun and derive the equation of recoil gun.
c) State four industrial applications of ultrasonic testing.
d) Explain the production of Ultrasonic wave using piezoelectric method.
e) A car is moving with an initial velocity 30m/sec then brakes are applied and car receives an acceleration of -2m/s^2, how far will it have gone 1) when velocity has decreased to 15m/s 2) when it comes to rest.
f) A bullet is fired with a velocity of 300m/s in the direction making an angle of 40^0 with the horizontal. Calculate 1) maximum height reached 2) Range 3) Time of flight.
g) Give four applications of LPT method.
h) Distinguish between Destructive testing & Non-destructive testing.
i) A particle is starting with an initial velocity of 60m/sec, has a rectilinear motion with a constant deceleration 10 m/sec^2. Determine the displacement after 6 sec. Use V-T diagram.

Question Bank for diploma first year-Mechanical Branch

Q1.Define: 1. Fuel

2. Calorific Value

3. Ignition Temperature

Q2. Write the characteristic properties of a good fuel?

Q3.What is fuel .How is it classified with suitable examples?

Q4.What is petroleum. Explain fractional distillation of crude petroleum by drawing a suitable diagram?

Q5. Define Biodiesel?

Q6. Write composition, properties and uses of: 1. Biodiesel

2. Biogas

3. LPG

4. CNG

Q7. What is proximate analysis? How moisture and volatile matter is analysed?

Q8. Write difference between: 1. Solid and liquid fuels

2. Liquid and gaseous fuels

Q9. Define a lubricant. With suitable examples, classify lubricants?

Q10. What is lubrication .Name the types of lubrication. Explain the importance of extreme pressure lubrication?

Q11. What is fluid-film lubrication? Where is it used? Draw a neat diagram?

Q12. Define the following: 1. Viscosity

2. Viscosity Index

3. Volatility

4. Oiliness

5. Pour Point

6. Neutralisation Number

Q13. Write difference between flash and fire points?

Q14. What are lubricants? State the functions of lubricants?

Q15. State the principle of extreme pressure lubrication. Name two organic compounds which are added to lubricants to make it suitable for extreme pressure lubrication?

Q16. Name three lubricants used under conditions of high pressure and high temperature. State and explain the type of lubrication involved?

Q17. State and define the property of a lubricant which tends to evaporate a lubricant at high temperature. What is the effect of it if it is used at high temperature?

Q18. Explain the process of boundary lubrication with the help of a neat diagram?

Q19. Explain the term emulsification. Name the lubricant used for:

1. Gears
2. Delicate Instruments
3. Machine at low speed and extreme pressure
4. Cutting tools