1. Define scalar product? Prove that A. A. B= AxBx + AyBy+ AzBz
2. Represent vector in 2 D as two perpendicular coordinates ?
3. Derive and apply the relation between torque , moment of inertia and angular acceleration .
4. Define projectile motion. Predict qualitatively how air resistance affect projectile motion?
5. Write the difference between elastic and in elastic collision ?
6. Explain why object in orbiting satellite appears to be weightless in ?
7. Analyse situation involving circular motion in term of centerpetal force, tension and gravity force ?
8. Define angular acceleration prove that a = r alpha?
9. Derive the relation of torque, angular velocity and moment of inertia?
10.Justify equation of continuity is a form of principle of conservation of mass?
11.state torrcillius Theorem?
12.Define isothermal and adiabatic process? Write formula and unit
13.State that boltzmann constant k is given by k= R /NA
12.Define first law of thermodynamics Justify how first law of thermodynamics follow law of conservation of energy?
12.Define entropy? Explain with example increases in entropy means degradation of energy?
13.Define drift velocity? Derive it's relation?
14.State that light dependant resistance decrease as light intensity increases?
12.Define resistance. Prove that R= L
A
13.state and use potentiometer as means of comparing potential difference?
14.Explain how electric and magnetic field use in velocity selector method?
15.Desribe Fleming left hand rule?
16. Define Flux and magnetic flux linkage?
17.State Faradays of electromagnet induction? Write formula and experiment
18. State electromotive force? Write the condition at which maximum power is obtained?
19.state kirchoffs voltage law? Prove that it follows law of conservation of energy?
20.Define Refrigerator. Derive the relation of c.p of cooling?
21Determine the dimension of following quantities

(a). v^2/ax (b) . $at^2/2$

22.what is difference between base and derived units ?

23.write the limitation of dimensional analysis ?

24.Define work ? Write its formula and condidtion of maximum and minimum work done ?

25.State work energy principle ? Also explain work energy principle in resistive medium ?

26.Define efficiency .write its forumal and effieciency of ideal machine ?

27.Write the difference between brittle and ductile substance ?

28.Explain the term stress , strain, elastic and plastic region ?

29.Write the experiment to find the modulud of metallic wire ?

30.State intensity of wave ? write it`s formula also explain with example

31.Define Dopplers effect ? write its application in SONAR ?

32.Define interference ? Write the condition of interference ?

33.Explain Polarization .Explain polarization by reflection ?

34.Calculate equivalent energy of electron having rest mass 9.11 X 10^{-3} kg.

36.Explain Ferro fluids ?write its application in faradays cadge?

37.Define potential gradient .Derive its relation ?

38.Write the difference between hadrons and mesons?

39.IS atomic number increase in nuclear decay .Explain with example ?

40.What is magnitude of point charges that would create an electric field of 1.00 N / C at Point 2 m away ?

41.Write the difference and similarties between coulombs and gravitional Force ?