1. List two conditions which should be satisfied for work to be done.
2. Calculate the work done in pushing a cart through a distance of 50 m against the force of friction which is equal to 125 N.
3. Calculate the work done in lifting 200 kg of water through a vertical height of 6m. Assume g = 10 m/s^2.
4. Calculate the kinetic energy of a body of mass 2 kg moving with a velocity of 0.1 m/s.
5. An object of mass 15 kg is moving with a uniform velocity of 4 m/s. What is the kinetic energy possessed by the object?
6. Find the energy possessed by as object of mass 10 kg when it is at a height of 6 m above the ground given (g = 9.8 m/s^2).
7. An object of mass 12 kg is at a certain height above the ground. If the potential energy of the object is 480 J, find the height at which the object is with respect to the ground. (g = 10 m/s^2)
8. If acceleration due to gravity is 10 m/s^2, what will be the potential kept at a height of 5 m ?
9. A bag of wheat weighs 200 kg. To what height should it be raised so that its potential energy may be 9800 J? (g = 9.8 m/s)
10. Give few examples of objects having mechanical energy.
11. The pendulum bob comes to rest after oscillating for some time why?
12. The hanging bob of a simple pendulum is displaced to one extreme position B and then released. It swings towards centre position A and then the other extreme position C. In which position does the bob have :
    (i) Maximum Potential Energy ?
    (ii) Maximum Kinetic Energy ?
13. A driver increases the speed of his car on approaching a hilly road. Explain why?
14. What is the work to be done to increase the velocity of a car from 30 km/h to 60 km/h if the mass of the car is 1500 kg?
15. Two bodies of equal masses move with uniform velocities v and 3v respectively. Find the ratio of their kinetic energy
16. How much work should be done on a bicycle of mass 20 kg to increase its speed from 2 m/s to 5 m/s?
17. Give examples of positive work, negative work and zero work.
18. A car of mass 1000 kg traveling at 30 m/s stops at a distance of 50 m decelerating uniformly. What is the force exerted by it on the brakes? What is the work done by the brakes?
19. Derive relationship between kWh and Joule.
20. An electric bulb of 60W is used for 6 h per day. Calculate the 'units' of energy consumed in 1 day by the bulb.
21. A radio set of 60 watts runs for 50h. How many 'units' of electrical energy are consumed?
22. A family uses 250 units of electrical energy during a month. Calculate this electrical energy is Joules.
23. An electric room heater with 2 rods is rated at 2kw. What is the cost of using it for 2 h a day for the month of September, if each unit costs Rs. 2.00?
24. What is the cost of seeing two movies on colour T.V. daily for the month of September? Given wattage of colour T.V. = 60 W, duration of each movies is 2 h 30 min. and 1kWh costs. Rs. 2.40.
25. In a house two 60 W electric bulbs are lighted for 4h and three 100 W bulbs for 5 hours everyday. Calculate the electrical energy consumed is 30 days.
26. Two girls, each of weight 400 N climb up a rope through a height of 8 m. We name one of the girls A and the other B. Girl A takes 20s. While B takes 50s to accomplish this task. What is the power expended by each girl?
27. A boy of mass 50 kg runs up a staircase of 45 steps in 9s. If the height of each step is 15 cm. Find his powers (g = 10 m/s^2)
28. A body does 20 joules of work in 5 sec. What is its power?

29. What is the power of a pump which takes 10 seconds to lift 100 kg of water to a water tank situated at a height of 20 m? (g = 10 m/s^2)

30. An electric bulb consumes 72 kJ of electrical energy in 2 min. What is the power electric bulb?