CHAPTER # 4: WORK AND ENERGY

(1) Work done will be maximum if the angle between the force F and displacement d is.

(a) 45^o
(b) 90^o
(c) 180^o
(d) 0^o

(2) A field in which the work done in a moving a body along closed path is zero is called.

(a) Electric field
(b) Conservative field
(c) Electromagnetic field
(d) Maximum

(3) When a force is parallel to the direction of motion of the body, then work done on the body is.

(a) zero
(b) minimum
(c) infinity
(d) maximum

(4) Which of the following types of force can do no work on the particle on which it acts?

(a) frictional force
(b) gravitational force
(c) elastic force
(d) centripetal force

(5) If a body a mass of 3 kg is raised vertically through 2m, then the work done will be.

(a) 38. 2 J
(b) 392.1 J
(c) 39.2J
(d) 3.92J

(6) The average power and instantaneous power become equal if work is done at.

(a) any rate
(b) at variable rate
(c) at uniform rate
(d) at high rate

(7) The relation between horse power and watt is.

(a) 1 hp = 546 watts
(b) 1 hp = 746 watts
(c) 1 hp = 1000 watts
(d) 1 hp = 946 watts

(8) Slope of work time graph is equal to.

(a) Displacement
(b) Acceleration
(c) Power
(d) Energy

(9) Work done on the body equals to the.

(a) change in its K.E always
(b) change in its P.E always
(c) change in it K.E and change in its P.E
(d) neither change in K.E nor change in its P.E

(10) The escape velocity of a body in gravitational field of earth is independent of.

(a) its mass
(b) the angle at which its is thrown
(c) both its mass and the angle at which it is thrown
(d) gravitational field of earth

(11) The tides raise the mater in the see roughly in a day.

(a) once
(b) twice
(c) four time
(d) eight time

(12) The source of geothermal energy is.

(a) decay of radioactive element in the earth
(b) compression of material in the earth
(c) residual lost of the earth
(d) all as said in a, b and c

Written and composed by: Prof. Muhammad Ali Malik (M. Phil. Physics), Govt. Degree College, Naushera

(13) Work done by the force of friction is.

(a) always positive
(b) always negative
(c) positive only for small frictional force
(d) positive only for large frictional force

(14) If velocity is double, then.

(a) momentum increase 4 times and K.E increases 2 times
(b) momentum and K.E remain same
(c) momentum increases 2 times and K.E increase constant
(d) momentum increases 2 times and K.E increases 4 times

(15) When the speed of a moving body is doubled, then.

(a) its K.E is doubled
(b) its acceleration is doubled
(c) its P.E is doubled
(d) its momentum is doubled

(16) One mega watt hour is equal to.

(a) $36x\ 10^6$ J
(b) $36x\ 10^{12}$ J
(c) $36x\ 10^9$ J
(d) $36x\ 10^8$ J

(17) Which of the following is not conservative force?

(a) Friction
(b) electric
(c) gravitational
(d) magnetic

(18) Work has the dimension as that of same as that of.

(a) torque
(b) angular momentum
(c) linear momentum
(d) power

(19) The escape velocity form the earth surface in km s^{-1} is.

(a) 4.2 km s^{-1}
(b) 7.5 km s^{-1}
(c) 9.5 km s^{-1}
(d) 11 km s^{-1}

(20) When arrow is released from its bow, its energy is transformed from.

(a) heat energy to K.E
(b) elastic P.E to K.E
(c) chemical energy to elastic P.E
(d) K.E to elastic P.E

(21) A body is falling freely under gravity from point A to point B. The energy of the body at the point C is

(a) is less than its energy at A
(b) is equal to its energy at A
(b) is greater than its energy at A
(d) None of these

(22) The work done by the force of 10N applied parallel to direction of motion up to 20 m

(a) 10 J
(b) 20 J
(c) 200 J
(d) 2000 J

(23) The SI unit of power is

(a) Joule
(b) Horsepower
(c) kWh
(d) Watt

(24) The work done is said to be negative when force and displacement are

(a) Parallel
(b) Anti-parallel
(c) Perpendicular
(d) None

(25) The dimensions of power are:

(a) $[MLT^{-1}]$
(b) $[ML^2T^{-3}]$
(c) $[ML^2T^{-1}]$
(d) $[MLT^{-2}]$

(26) One kilowatt hour of work is equal to

(a) 0.36 MJ
(b) 3.6 MJ
(c) 36 MJ

Written and composed by: Prof. Muhammad Ali Malik (M. Phil. Physics), Govt. Degree College, Naushera

(d) 360 MJ

(27) The energy stored in the spring of a watch is:

(a) K.E
(b) Electrical Energy
(c) Elastic P.E
(d) Solar Energy

(28) Work-energy equation can be expressed as:

(a) $Fa = K.E_f - K.E_i$
(b) $ma = (K.E_f)^2 - (K.E_i)^2$
(c) $Fd = K.E_f - K.E_i$
(d) $F.V = K.E_f - K.E_i$

(29) An example of non-conservative force is

(a) Electrical force
(b) Frictional force
(c) Gravitational force
(d) Magnetic force

(30) The consumption of energy by 60 watt bulb in 2 seconds is:

(a) 20 J
(b) 120 J
(c) 30 J
(d) 0.02 J

(31) If the radius of the moon is 1600 km and g on its surface is 1.6 ms^{-2}, then escape velocity on moon is:

(a) 1600 ms^{-1}
(b) 50.6 ms^{-1}
(c) 71.6 ms^{-1}
(d) 2263 ms^{-1}

(32) Power is also defined as dot product of

(a) Force and displacement
(b) Force and mass
(c) Force and velocity
(d) Force and time

Written and composed by: Prof. Muhammad Ali Malik (M. Phil. Physics), Govt. Degree College, Naushera