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Q1: A) $K = \frac{1}{2}(3)\cdot V^2 = 1.5MV^2$

B) $K = \frac{1}{2}(3)(2)^2V^2 = 6MV^2$

C) $K = \frac{1}{2}(2)(3)^2V^2 = 9MV^2$ ← has the largest

D) $K = \frac{1}{2}(1)\cdot(4)^2V^2 = 8MV^2$

So the answer is (C)

Q2: $m = \frac{8000}{10} = 800kg$

$K = \frac{1}{2}mv^2$

$= \frac{1}{2} \times 800 \times 12^2$

$= 5\,8000 = 5.9 \times 10^4 j$

Q3: $= \frac{1}{2} M V^2$

$= M \cdot \frac{L^2}{T^2}$

Q4: $W = Fd\cos\theta$

$W = 40(0)\cos 0$

$W = 0$

So Answer is zero

Q5: $W = Fd$

$= 3 \times 2\pi r$

$= 3 \times 2 \times 3.14 \times 2.5$

$= 47 J$

Q6: The Aswer is (E) the centripetal force is Perpendicular to the Velocity

Q7: zero. The Centripetal force is perpendicular to the motion and doesnt work, the same goes for gravity, Actually. any force must have done zero work on the object in total if the object has the same posiston, speed, direction after one full revolution.

Q8: Let $m = 1\,kg$

A) $K_i = \frac{1}{2} \cdot (1)(5)^2 = 12.5$ $\quad K_f = \frac{1}{2}(1)(2)^2 = 2$ $\quad K_f - K_i = 2 - 12.5 = -ve$

B) $K_f - K_i = 2 - 12.5 = -ve$

C) $K_f - K_i = 2 - 12.5 = -ve$

D) $K_f - K_i = 2 - 12.5 = -ve$

E) $K_f - K_i = 12.5 - 2 = +ve$ ✓

Answer is (E)

Q9:

$F = m \times a$

$= 4\,(-2.25)$

$= -9\,N$

$2as = V_f^2 - V_i^2$

$a = \frac{0^2 - (3)^2}{2 \times 2}$

$a = -2.25$

$W = Fd$

$= -9\,(2)$

$= -18\,J$

Q10:

$W = 1\,(9.8)$

$= 9.8\,N$

$W = Fd$

$= (9.8)(1)$

$\approx 10\,J$

Q11: $W = -F_g \cdot -d\cos\theta$

$= F_g \cdot d \cdot 1 = +ve$

So It's (A) Positive

Q12: $W = Fd$

$= 100 \times 5$

$= 500\,J$

Q13: The Answer is (E)

$W = \frac{1}{2}kx_i^2 - \frac{1}{2}kx_f^2$

$= \frac{1}{2}(1)(-4)^2 - \frac{1}{2}(1)(-2)^2$

$= \frac{16}{2} - \frac{4}{2} \quad = 8 - 2$

$= 6\,J$ +ve

Q14: The Answer is (C)

Q15: $P = \frac{W}{t} = \frac{Fd}{t}$

$= \frac{m \cdot a \cdot d}{t}$

$= \frac{Kg \frac{m}{s^2} m}{s} = \frac{Kgm^2}{s^3}$ The Answer is (C)

Q16: ~~$P = W \cdot mg \cdot \theta$~~

$P = \frac{W}{t} = \frac{F \cdot d}{t} = \frac{20 \cdot 60 \cdot 10 \cdot 5}{60} = 1000\,N$

Q 18 ?

$$\text{Power} = \frac{\text{Work (energy)}}{\text{time}}$$

$$KW = \frac{\text{work (energy)}}{1h}$$

Energy = KWh So ~~Aswere~~Answer is (C) energy

Q 19 ?

$$P = F \cdot \cos\theta$$

$$= 190 \cos 25 \times 7.3$$

$$= 1257$$

$$\approx 1300W$$