

- 8** A turbine at a hydroelectric power station is situated at a vertical distance 30 m below the level of the surface of a large lake. The water passes through the turbine at a rate of  $5.7 \text{ m}^3 \text{ s}^{-1}$ .

The overall efficiency of the turbine and generator system is 90%. The density of water is  $1000 \text{ kg m}^{-3}$ .

What is the useful power output of the power station?

- A** 0.15 MW                      **B** 1.5 MW                      **C** 1.7 MW                      **D** 90 MW

- 9** A small coin of mass 10 g is placed on a horizontal rotating disc at a distance of 5.0 cm from the centre