|  |  |  |
| --- | --- | --- |
| **Curriculum Requirements** | **Even Test Paper** | **Odd Test Paper** |
| year 12 prior content |  |  |
| an induced emf is produced by the relative motion of a straight conductor in a magnetic field when the conductor cuts flux lines  *This includes applying the relationship*  induced emf = l v B  where v perpendicular B | Q2(4)  Q3(6) |  |
| magnetic flux is defined in terms of magnetic flux density and area  *This includes applying the relationship*  Φ = B A | Q6(3) |  |
| a changing magnetic flux induces a potential difference; this process of electromagnetic induction is used in step‐up and step‐down transformers, DC and AC generators  *This includes applying the relationships* | Q1(8)  Q6(3) |  |
| conservation of energy, expressed as Lenz’s Law of electromagnetic induction, is used to determine the direction of induced current | Q1(3) |  |
| a changing magnetic flux induces a potential difference; this process of electromagnetic induction is used in step‐up and step‐down transformers, DC and AC generators  *This includes applying the relationships*  AC generator emfmax = -2 N l v B  = - 2 π N B A f ,  emfrms = | Q5(16) |  |
| a changing magnetic flux induces a potential difference; this process of electromagnetic induction is used in step‐up and step‐down transformers, DC and AC generators  *This includes applying the relationships*  ,  P = V I = I2 R = | Q4(11) |  |
| the force due to a current in a magnetic field in a DC electric motor produces a torque on the coil in the motor  *This includes applying the relationship*  τ = r F | Q3(2) |  |
| **TOTAL** | 6 questions  56 marks |  |