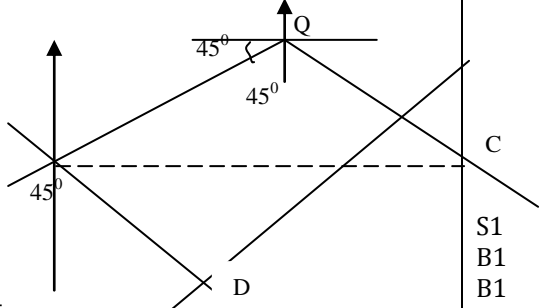
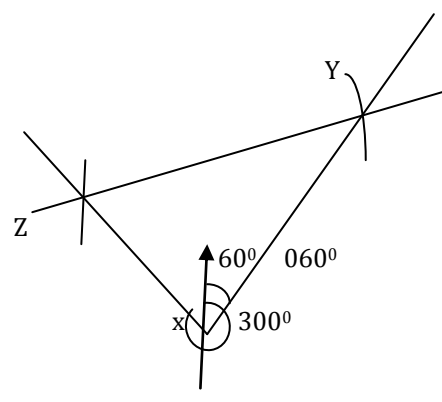
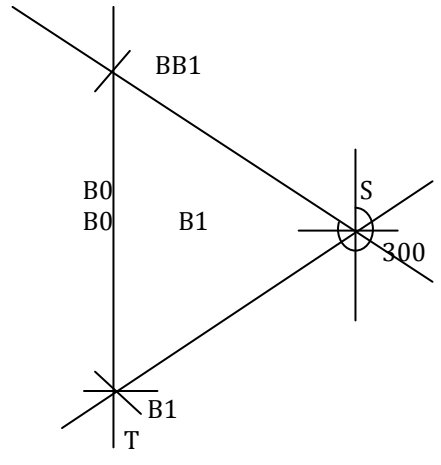


## APPLIED GEOMETRY - BEARINGS MARKING SCHEME

1.	Scale: 1cm rep 20km thus =4cm and 200km =10cm  Bearing of s from p is $075^\circ \pm$ (or $N75^\circ E$ )  <p style="text-align: right;"><b>1989Q8</b></p>	4M		$(c) \frac{x}{360} \times \frac{22}{7} \times 2 \times 6370 \cos 36 = 840$ $x = \frac{840 \times 9}{11 \times 91 \times 0.8090} = 9.34$ Town C longitude = $131^\circ - 9.34^\circ$ $= 121.66^\circ W$  <p style="text-align: right;"><b>1996Q20</b></p>	
2.	Scale: 1cm rep 50km( <b>must be used</b> )  (i) Distance AE = $8.3[\pm 0.1] \times 50$ $= 415[\pm 5] \text{ km}$ (ii) bearing of E from A = $112^\circ \pm 10$ [ors $68^\circ$ ]  <p style="text-align: right;"><b>1993Q22</b></p>	8M		Bearing of $060^\circ$ drawn Bearing of $210^\circ$ drawn  Distance on scale drawing Representing 1500km Representing 1800km  (b) (i) Actual distance $(16 \pm 0.1) \times 200$ or equivalent $= 3200 \text{ km}$  (ii) bearing of T from S (iii) bearing of S from T $= 044^\circ \pm 1^\circ$  <p style="text-align: right;"><b>1997Q23</b></p>	B1 B1  B1 B1  M1 A1  B1 B1 8marks
3.	Scale: 1cm rep 50km( <b>must be used</b> )  Bearing of Chamwe from Manyatta is the angle shown by the arrow $= 169 \pm 1^\circ$ [ors $11^\circ E$ ]  <p style="text-align: right;"><b>1995Q4</b></p>	3M		(a) 600km and 500km seen or used Scale used Bearing and distance of P Bearing and distance of Q  (b) $PQ = 10.6 \pm 0.1$ $= 1060 \pm 10 \text{ km}$  (c) (i) $254^\circ \pm 1^\circ$ (ii) $0740 \pm 1^\circ$  <p style="text-align: right;"><b>1998Q22</b></p>	B1 S1 B1 B1 B1 B1 B1  B1 B1 8marks ks
4.	Scale: 1cm rep 50km( <b>must be used</b> )  (i) Distance AD = $4.6[\pm 5] \times 10 = 46[\pm 1] \text{ km}$ (ii) bearing of D from B = $240^\circ$ or $S60^\circ W$ (iii) Bearing of the island P from D $= [\pm 1]^\circ$ [or $S58^\circ E$ ] (iv) Distance = 12.7 $[\pm 1] \times 10 = 127[\pm 1] \text{ km}$	2M		8 a)   √Scale used √Position of B √Position of C √Mediator of BQ or QC of BC	S1 B1 B1  B1 B1
5.	(a) $131 + 49 = 180^\circ$  (b) $\frac{180}{360} \times \frac{22}{7} \times 2 \times 6370 \cos 36$ $= 16,196.18 \text{ km}$				

	<p>Mediator and D identified</p> <p>b) i) Distance B to C = 73 + 1km</p> <p>ii) North line at B + 2°</p> <p>bearing = 102° + 1° OR s78°e + 1°</p> <p style="text-align: center;"><b>2002Q22</b></p>	<p>B1</p> <p>B1</p> <p>B1</p> <p style="text-align: center;">8 marks</p>
9.	<p>1 cm rep 40km</p> <p>Time = <math>496</math>  <math>1.853 \times 40</math>  <math>= 6.691</math> hr</p> <p style="text-align: center;"><b>2003Q19</b></p>	
10.	<p style="text-align: center;"><b>2004Q19</b></p>	

11.	<p>a). Direct and distance of Q from P  Direction and distance of R from P</p> <p>b). i). Distance conversion  <math>8.5 \times 40</math>  <math>= 340</math></p> <p>ii). Northline at Q  Bearing 0630 stated</p> <p>c). i). Distance from the top of the post at Q to the top of post at P  <math>X = 240</math> or <math>x \cos 90 = 240</math>  <math>\cos 90</math>  <math>= 243\text{m}</math></p> <p>ii). Speed 4 bird  <math>243 \times 60 \times 60</math>  <math>1000 \times 18</math>  <math>= 48.6\text{km/h}</math></p> <p style="text-align: center;"><b>2009Q23</b></p>	<p>B1</p> <p>B1</p> <p>B1</p> <p>M1</p> <p>A1</p> <p>B1</p> <p>B1</p> <p>M1</p> <p>A1</p> <p>A1</p> <p>10 marks</p>
12.	<p>b) i) Distance of P from s = 10.8 + 0.1cm</p> <p>ii) <math>\angle PSN = 74 + 10</math></p> <p>bearing of P from S = 286 + 10</p> <p>c) area of PQR = <math>\frac{1}{2} \times 10.2 \times 12.2</math>  <math>= 63.44\text{km}^2</math></p> <p>Area of PRS = <math>\frac{1}{2} \times 10.2 \times 2 \sin 60^\circ</math>  <math>= 30.6\text{km}^2</math></p> <p>Area of ranch PQRS  <math>= 62.22 + 30.6</math>  <math>= 92.82\text{km}^2</math></p> <p style="text-align: center;"><b>2010Q20</b></p>	<p>B1</p> <p>B1</p> <p>B1</p> <p>A1</p> <p>M1</p> <p>M1</p> <p>B1</p>

13	 <p>Distance XZ = <math>3 \times 10 = 30\text{km}</math></p> <p style="text-align: right;"><b>2011Q15</b></p>	
14. (a)	 <p>√location of R √Location of T complete <math>\Delta</math></p> <p>Distance TS: <math>(6.6 \pm 1)\text{cm}</math> Conversion <math>6.6 \times 60 = 396\text{m}</math></p> <p>(b) (i) Bearing of T from S <math>180 + 41^\circ(\pm 1^\circ) = 221 \pm 1^\circ \quad 541^\circ\text{w}</math></p> <p>(ii) Area of field <math>\angle \text{TRS } 60^\circ \pm</math></p> <p>(c) Area = <math>\frac{1}{2} \times 300 \times 450 \sin 60^\circ</math>  = <math>\frac{58456.71476}{10000}</math> = 5.8ha 5.7 5.9</p> <p style="text-align: right;"><b>2012Q23</b></p>	<p>B1 B1 B1 B1 B1 B1 B1 B1 M1 M1 A1 10</p>

