PapaCambridge

1(b)(i)	$\frac{y}{2}$ oe	**1**	
1(b)(ii)	x	**1**	
1(b)(iii)	$90 + x$ oe	**2**	FT $90 +$ *their* (a)(ii) **B1** for $B\hat{A}C = 90°$ or $B\hat{D}C = 90°$
1(b)(iv)	$90 - x - \frac{y}{2}$ oe	**1**	
2	27	**2**	**B1** for $B\hat{O}Q = 54$ soi or $O\hat{B}Q = 90$ soi or $B\hat{O}Q = 2x$ soi
3(a)	35	**1**	
3(b)	100	**2**	**B1** for $\angle OAB = 55$ or $\angle OBA = 55$
4(a)	66	**2**	**M1** for $\frac{180 - 48}{2}$ soi
4(b)	108	**1**	
4(c)	126	**1**	
5(a)	$A\hat{B}O = 50°$ angles on straight line $A\hat{O}B = 80°$ angles in isosceles triangle $A\hat{C}B = 40°$ angles at centre twice angle at circumference	**3**	**B1FT** for one correct angle with reason **B1** for $A\hat{C}B = 40°$ nfww
6.	Use of Pythagoras leading to 10.5 oe	**4**	**B1** for $OP = 4$ **and** $PQ = x$ soi **M1** for $OQ^2 = OT^2 + TQ^2$ oe soi **B1** for $x^2 + 4x + 4x + 16$ seen or $x^2 + 8x + 16$ seen
7(b)(i)	124°	**2**	**B1** for $\angle ADB$ or $\angle BCA = 62°$ soi or $\angle AOD = 56°$ soi or $\angle AOB = 124°$ soi
8(a)	34° cao	**1**	
8(b)	68° cao	**1**	
8(c)	77° cao	**1**	

Mega Lecture

9(a)	$\angle BCX = \angle DCY$, [vertically] opposite $\angle XBC = \angle BCX$, $\angle YDC = \angle DCY$, angles in isosceles [triangles] Hence $\angle XBC = \angle YDC$ $\angle CXB = \angle DYC$, third angle in triangle Hence triangles similar	**3**	**B1** for two correct pairs of angles **B1** for correct reason for one pair of angles
9(b)(i)	$90 - x$ oe final answer	**1**	
9(b)(ii)	$180 - 2x$ oe final answer	**1**	**FT** $2 \times$ *their* algebraic (b)(i)
10(a)	53	**1**	
10(b)	40	**1**	
10(c)	22	**1**	
11(a)	106	**1**	
11(b)	127	**1**	
11(c)	59	**1**	
11(d)	31	**1**	**FT** 90 – *their* **(c)**
12(a)(i)	$\frac{y}{2}$ oe angle at centre = twice angle at circumference oe	**2**	**B1** for $\frac{y}{2}$
12(a)(ii)	$90 - y$ oe [Angle between] radius and tangent = 90°, [sum of angles in a triangle]	**2**	**B1** for $90 - y$
12(a)(iii)	$2y$ oe or 2(90 – *their* **(a)(ii)**) or 180 – 2 *their* **(a)(ii)** Angle in semicircle = 90°	**2FT**	**FT** dependent on expressions in y **B1** for $2y$
13(a)	Angles in same segment are equal	**1**	
13(b)	$\angle PQT = 55°$	**1**	
13(c)	$\angle SPQ = 70°$	**1**	
13(d)	$\angle SRQ = 110°$	**1**	**FT** 180 – *their* **(c)**
14 (a)	*TAB* *ATB* Statement mentions tangent and radius *ABT*	**2**	B1 for 2 pairs of equal angles.

Mega Lecture

15 (a)			
(b)	146	1	
(c)	34; or FT *their* (a)/2; or FT 180 – *their*(b)	1 √	
(d)			

16 (a) (i)	Convincing explanation	**1**	
(ii)	28	**2**	**B1** for $O\hat{C}D = 124$ or triangle *COD* isosceles soi
(iii)	76	**1ft**	

17 (a)			
(b)			
(c)	48 or FT 110 – *their (b)*	1 √	

Mega Lecture