Mark Scheme : Waves : General

Jan 2002 to June 2008

Note multiple choice questions are not used in the new current Y12 AS spec. These come from the old unit 4A. These are the whole MS for all the multiple choice questions

Section A: Objective test keys **Jan 2002**

1-D; 2-C; 3-B; 4-C; 5-B; 6-D; 7-B; 8-A; 9-D; 10-C; 11-B; 12-B; 13-A; 14-D; 15-B.

Section A **Jun 2002**

Key to Objective Test Questions

1-B; **2**-B; **3**-D; **4**- C; **5**-A; **6**-C; **7**-B; **8**-B; **9**-D; **10**-A; **11**-C; **12**-C; **13**-D; **14**-A; **15**-C.

Section A **Jan 2003**

1-B; 2-A; **3**-D; **4**-C; **5**-D; **6**-B; **7**-B; **8**-D; **9**-B; **10**-C; **11**-D; **12**-A; **13**-B; **14**-A; **15**-B.

Key to Objective Test Questions **Jun 2003**

1-A; **2**-B; **3**-A; **4**-B; **5**-A; **6**-B; **7**-A; **8**-A; **9**-D; **10**-C; **11**-C; **12**-D; **13**-A; **14**-C; **15**-D.

Unit 4: Section A **Jan 2004**

Key to Objective Test Questions

1-C; **2**-A; **3**-D; **4**-D; **5**-B; **6**-A; **7**-C; **8**-D; **9**-C; **10**-C; **11**-A; **12**-C; **13**-C; **14**-B; **15**-B.

Unit 4: PA04 Section A
Waves, Fields and Nuclear Energy

Jun 2004

Key to Objective Test Questions

1-C; **2**-D; **3**-A; **4**-D; **5**-D; **6**-B; **7**-A; **8**-B; **9**-B; **10**-A; **11**-B; **12**-C; **13**-D; **14**-D; **15**-B.

Unit 4: PA04 Section A
Waves, Fields and Nuclear Energy

Jan 2005

Key to Objective Test Questions

1-B; **2**-A; **3**-D; **4**-A; **5**-C; **6**-C; **7**-D; **8**-D; **9**-C; **10**-D; **11**-C; **12**-B; **13**-B; **14**-A; **15**-C.

PA04 Section A Waves, Fields and Nuclear Energy

Jun 2005

Key to Objective Test Questions

1-B; **2**-A; **3**-D; **4**-B; **5**-C; **6**-C; **7**-C; **8**-D; **9**-D; **10**-A; **11**-A; **12**-B; **13**-A; **14**-B; **15**-C.

Section A

Jan 2006

This component is an objective test for which the following list indicates the correct answers used in marking the candidates' responses.

	Keys to Objective Test Questions															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	C	**C**	**B**	**C**	**A**	**D**	**B**	**B**	**A**	**D**	**C**	**A**	**D**	**B**	**D**	

PA04 Section A: Waves, Fields and Nuclear Energy

Jun 2006

	Keys to Objective Test Questions															
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	
	B	C	A	C	A	D	B	C	D	D	B	C	D	B	B	

Section A

Jan 2007

This component is an objective test for which the following list indicates the correct answers used in marking the candidates' responses.

	Keys to Objective Test Questions															
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	
	A	B	D	A	C	B	C	D	A	B	D	B	D	C	A	

Section A

Jun 2007

This component is an objective test for which the following list indicates the correct answers used in marking the candidates' responses.

	Keys to Objective Test Questions															
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	
	C	B	A	C	A	B	D	C	B	C	D	B	D	C	A	

Section A

Jan 2008

This component is an objective test for which the following list indicates the correct answers used in marking the candidates' responses.

	Keys to Objective Test Questions															
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	
	D	B	C	B	A	C	B	C	D	C	A	C	D	B	A	

Section A

Jun 2008

This component is an objective test for which the following list indicates the correct answers used in marking the candidates' responses.

	Keys to Objective Test Questions															
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	
	C	A	A	D	B	A	C	D	D	C	A	B	D	C	B	

Question 2		
(a)	vibrates or oscillates or moves in shm ✓ vibration/oscillation is vertical/perpendicular to wave propagation direction ✓ frequency ($=c/\lambda$) = 3.0 (Hz) ✓ (or same as P) amplitude = 90 (mm) ✓ (or same as P) Q has a phase lag on P ✓ (or vice versa) phase difference of $\left(\frac{0.4}{1.2}\times 2\pi\right)=\frac{2\pi}{3}$ (rad) or 120° ✓	**max 5**
(b)	use of f = 3.0 (Hz) ✓ v_{max} ($=2\pi fA$) $=2\pi\times 3.0\times 90\times 10^{-3}$ ✓ $=1.7(0)\,\mathrm{m\,s^{-1}}$ ✓	**3**
	Total	**8**