

Mark schemes

Q1.

B

390 nm

[1]

Q2.

D

32 cm

[1]

Q3.

C

reduces signal loss.

[1]

Q4.

A

$(S_1Y - S_2Y) - (S_1W - S_2W)$

[1]

Q5.

A

using monochromatic light of lower frequency.

[1]

Q6.

B

16.2°

[1]

Q7.

C

3.1 rad

[1]

Q8.

C

increase decrease

[1]

Q9.

A

decreasing the kinetic energy of the electrons

[1]

Q10.

A

0.22s 0.66λ

[1]

Q11.

C

decreases increases

[1]

Q12.

D

[1]

Q13.

A

[1]

Q14.

D

[1]

Q15.

D

[1]