Programming Practice (PRP), Coursework Exercise 4, Mark Scheme (Abbreviated)

Entry	Marks Available
At least four classes (`NetworkDevice`, `Packet`, `Channel` and `Network`)	4 marks
Fields: **address**, **channel** and **key** (`NetworkDevice`); **number** and **traffic** (`Channel`); **source address** and **destination address** (`Packet`); **map** between device and channel (`Network`)	8 marks
Fields are private and protected. Public fields are final and static	1 mark
Methods are used to access fields. Protected fields are not accessed via the object. There is no method to get the connected channel from `NetworkDevice`.	1 mark
A constructor that sets the address in `NetworkDevice`	1 mark
A constructor that sets the source and destination addresses in `Packet`	1 mark
`Client` and `AccessPoint` extend `NetworkDevice` **and** `HandshakePacket` extends `Packet`	1 mark
Fields: Connected access point (`Client`); Authorised clients (`AccessPoint`); Key (`HandshakePacket`)	1 mark
Creating `Client` and `AccessPoint` objects	1 mark
A method for adding an `AccessPoint` to a `Network`	1 mark
Ask the student to explain each stage of the handshake to you	
Sending a handshake packet from a `Client` to the `AccessPoint`	1 mark
Reading the handshake packet sent from the `Client`, and sending a packet back from the `AccessPoint` to the `Client`	1 mark
Reading the handshake packet sent from the `AccessPoint` to the `Client`	1 mark
Performing separate actions for both a successful and an unsuccessful handshake	1 mark
Normal `Client` communication activity	1 mark
Normal `AccessPoint` communication activity	1 mark
Network activity	1 mark
Clearing channels	1 mark
	28 marks total