OCR GCSE (J277)

Module F: The internet

Workbooklet mark scheme · 2 parts · 40 marks

F3-F5 are IGCSE (Cambridge) only and not on J277.

Contents

Part	Topic	Marks
F1	The Internet: a worldwide collection of networks: mark scheme	20
F2	URLs, DNS and how a web page reaches your screen: mark scheme	20
	Total	**40**

MODULE F THE INTERNET · F1

The Internet: a worldwide collection of networks: mark scheme

20 marks · OCR J277 spec 1.3.1 (with 1.3.2 protocols)

How to use. 1 mark per bullet up to the maximum shown. **/** separates alternative words; **//** separates alternative answers for the same mark. Words in (brackets) are not needed for the mark. Credit any other valid answer that shows the same understanding. Spec points: J277 1.3.1 The Internet as a worldwide collection of computer networks; the concept of the Internet as a network of computer networks; the tasks performed by each piece of hardware; web servers and clients; servers providing services; the Cloud. J277 1.3.2 standards and protocols (TCP/IP). The World Wide Web is not named in J277, so this worksheet does not test it.

QUESTION	ANSWER	MARKS	GUIDANCE
1(a) J277 1.3.1	A worldwide collection of computer networks	**1**	2+ ticks = 0 marks.
1(b) J277 1.3.1	Many / separate / individual networks (e.g. LANs / WANs) ... ... are connected / joined / linked together (to form one large network) Devices on one network can communicate with / send data to devices on a different network The networks are spread across the world // it connects networks in different countries	**2**	Max 2. "A network that connects computers" alone = NE (true of any network). Do not accept "a collection of websites / web pages".
2 J277 1.3.1 J277 1.3.2	worldwide LAN router transmission protocols	**5**	1 mark per correct gap, in this order. Words from the list only. Do not accept "switch" or "NIC" for gap 3. Allow "standards" for gap 5 (BOD, not in the list but correct).
3 J277 1.3.1	The Internet is a type of LAN: False May pass through several routers: True Client can only use a web server in the same building: False Wired and wireless transmission media: True	**4**	1 mark per correct row. 2+ ticks in a row = 0 for that row.
4(a) J277 1.3.1	1 mark each, max 2: Email // sending / receiving emails File transfer // sending / downloading files // file storage / retrieval on a file server Cloud storage // storing / backing up files remotely / online Using software / applications online / in the Cloud Remote processing (in the Cloud) Video calls / video conferencing / online meetings // instant messaging Streaming video / music	**2**	Credit any other valid service. Do not accept viewing / searching / browsing web pages or websites (given in the question). Do not accept a connection method (e.g. Wi-Fi, Ethernet) or a piece of hardware. Mark the first answer on each line.

QUESTION	ANSWER	MARKS	GUIDANCE
5(a) J277 1.3.1 J277 1.3.2	1 mark per bullet, max 4: The workshop LAN and the showroom LAN are both connected to the Internet (by a router) The Internet is a network of networks / a WAN // it connects the two LANs (together) The workshop's router sends the data out of the LAN onto the Internet The data is passed / forwarded from network to network // from router to router (across the Internet) ... using the (destination) IP address (of the showroom computer) to send it towards the showroom The data travels over transmission media / cables / fibre-optic / wireless / satellite links (that the business does not own) All the networks / devices use the same protocols / standards // TCP/IP ... so the data can be sent and understood The showroom's router receives the data and passes it (via the switch) to the showroom computer Alternative route: the file is uploaded over the Internet to a file server / cloud storage // ... and then downloaded by the showroom computer	**4**	"It goes through the Internet" / "it is sent online" alone = NE (repeats the question). Credit "split into packets" as part of the forwarding point but packets are not required. Do not accept answers that say the two sites form one LAN.
5(b) J277 1.3.1	1 mark per bullet, max 2: The printer and the showroom computers are on the same (showroom) LAN The LAN / switch / local hardware still works without the Internet Data sent to the printer stays inside the LAN // does not need to travel across the Internet The Internet (connection / router) is only needed to send data to other networks // the workshop is on a different network	**2**	"The printer does not need the Internet" alone = NE unless linked to the LAN. Do not accept "the printer is wireless" alone.

Total: 20 marks

MODULE F THE INTERNET · F2

URLs, DNS and how a web page reaches your screen: mark scheme

20 marks · OCR J277 spec 1.3.1 (the Internet: DNS, hosting, web servers and clients)

How to use. 1 mark per bullet up to the Max shown. **/** separates alternative words; **//** separates alternative answers for the same mark. Words in (brackets) are not needed for the mark. Credit any other valid answer that shows the same understanding. HTML and the parts of a URL are not required for J277: give no credit for them, but do not penalise them if the rest is correct.

QUESTION	ANSWER	MARKS	GUIDANCE
1(a) J277 1.3.1	Domain Name Server / Domain Name Service / Domain Name System	**1**	All three words needed. Ignore capitals.
1(b) J277 1.3.1	IP address // Internet Protocol address	**1**	Accept IPv4 / IPv6 address. Do not accept MAC address or "a number" alone.
2(a) J277 1.3.1	Stores the files that make up a website: Web server A laptop using a web browser: Client Finds the IP address that matches a URL: Domain Name Server Sends web pages to the devices that request them: Web server	**4**	1 mark per correct row. More than one tick in a row: 0 for that row.
3(a) J277 1.3.1	The website's files / web pages are stored on a (web) server // on another company's server The server is connected to the internet ... so other people / clients can access / view the website (at any time)	**2**	Max 2. "Making the website available on the internet" alone = 1 mark. Do not accept "creating / designing the website" or "owning the website".
3(b) J277 1.3.1	The smartphone requests the web page / website / a service from the (web) server The smartphone receives / uses the web page / service The (web) server provides the service / web page (to the smartphone)	**2**	Max 2. Do not accept "it connects to the internet" or "it is used by a person" alone.
4(a) J277 1.3.1	Row 1: False (1) ... rewrite: A DNS is made up of many / multiple Domain Name Servers // No single server stores the IP address of every website (1) Row 2: True (1) Row 3: False (1) ... rewrite: The web server sends the web page to the client // The DNS sends the IP address (of the web server) to the client (1) Row 4: True (1)	**6**	1 mark per correct True / False, 1 mark per correct rewrite. A rewrite can only score if False is ticked in that row. More than one tick in a row: 0 for that row's tick mark. Ignore rewrites on True rows.

QUESTION	ANSWER	MARKS	GUIDANCE
5(a) J277 1.3.1	The request / URL / domain name is passed / forwarded to another / a higher-level Domain Name Server That server looks up / searches for the URL / domain name in its table / database (of domain names and IP addresses) This repeats / it is passed on again until a server finds the matching IP address If no server has the IP address, an error (message) is returned (to the browser / computer) The IP address is returned / sent to the worker's computer / web browser The browser / computer then sends a request (for the web page) to the web server at that IP address ... and the web server sends the web page back (to the computer / browser)	**4**	Max 4. Max 2 if the answer never says the request goes to another / higher-level DNS server. MP5 needs the computer / browser: do not award "sent to the worker / user" alone. Do not credit answers where the URL is sent to the web server to be converted.

Total: 20 marks