CAMBRIDGE
International Education

Cambridge International AS & A Level

INFORMATION TECHNOLOGY **9626/32**

Paper 3 Advanced Theory **October/November 2025**

MARK SCHEME

Maximum Mark: 70

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the October/November 2025 series for most Cambridge IGCSE, Cambridge International A and AS Level components, and some Cambridge O Level components.

Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptions for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Annotations guidance for centres

Examiners use a system of annotations as a shorthand for communicating their marking decisions to one another. Examiners are trained during the standardisation process on how and when to use annotations. The purpose of annotations is to inform the standardisation and monitoring processes and guide the supervising examiners when they are checking the work of examiners within their team. The meaning of annotations and how they are used is specific to each component and is understood by all examiners who mark the component.

We publish annotations in our mark schemes to help centres understand the annotations they may see on copies of scripts. Note that there may not be a direct correlation between the number of annotations on a script and the mark awarded. Similarly, the use of an annotation may not be an indication of the quality of the response.

The annotations listed below were available to examiners marking this component in this series.

Annotations

Annotation	Meaning
	Benefit of the doubt
	To indicate where a key word/phrase is missing
	Incorrect
	Indicate a point in an answer
	Ignore subsequent work
	Statement/points are linked
	Maximum number of marks that can be awarded
	Not answered question
Off-page comment	Allows comments to be entered at the bottom of the RM marking window and then displayed when the associated question item is navigated to.
	To indicate a point that has already been made or was given in the question
	Indicates that work/page has been seen including blank answer spaces and blank pages.
	Correct
	Too vague
	Indicate a point in an answer

Mark scheme abbreviations

/ separates alternative words / phrases within a marking point
// separates alternative answers within a marking point
underline actual word given must be used by candidate (grammatical variants accepted)
max indicates the maximum number of marks that can be awarded
( ) the word / phrase in brackets is not required, but sets the context

Question	Answer	Marks
1(a)	**Two from:** • Unmanned / driverless vehicle / carrier • Minimal human intervention for navigating to destinations • Has integrated / interconnected technologies / software e.g. sensors • Uses / has AI • Uses GPS • Can be connected to internet / IoT / 5G telecommunications systems	**2**
1(b)	**Four from:** E.g.: Service robots / carts / unmanned vehicles used to: • Carry / deliver food / medicines to patients • Carry / deliver medical equipment to patients • Carry equipment for remote consultations • Take / carry samples (from patients / nurses / doctors) to laboratories for analysis • Transport patients • Assist accident victims / survivors of disasters / in emergencies • Automatically remove / dispose of waste materials • Used to ensure sterile environment / no contamination by people	**4**

Question	Answer	Marks
2(a)	**Three from:** • Customise / alter grid size • Enable / use snap-to-grid to precisely locate (new) object // manually precise align to grid • Customise snap-to-grid distance • Helps in scaling objects • Drop / position object on grid / next to another object	**3**
2(b)	**Three from:** • Create guide(line)s from ruler • Vertical guide created from horizontal ruler / create horizontal guide from vertical ruler • Enable / use snap-to-guide • Drop / position / move object on guide • Use guides as alignment aid for multiple (grouped) objects • Enables consistent positioning of objects	**3**

Question	Answer	Marks
3	**Five from:** **Max 4 from:** *Similarities:* *Both:* • Are visual / graphical representations of project • Show routes through project / tasks • Show timings / durations of tasks • Show total time of project • Show dependencies between tasks • Can show milestones • Can show critical path **Max 4 from:** *Differences:* • CPM shown as network diagram with linked nodes // Gantt is horizontal bar chart • CPM shows critical and non-critical paths • CPM calculates project duration / Gantt chart shows // visualizes how project progress • CPM does not show required resources // Gantt chart does / can show required resources • CPM show activities on network diagram without timescale // Gantt chart plots activities on a timescale	**5**

Question	Answer	Marks
4	**Six from:** **Command word: Discuss – write about issues(s) or topic(s) in a structured way.** *E.g.: content areas could include:* • Linking / connecting home appliances / devices together – to exchange data / information – creation of smart homes / more automation of everyday activities – enhanced security / remote monitoring • Use of wearable computing devices – e.g. smart watches / fitness trackers / heart monitors – to monitor health parameters / activities • Integration with augmented reality – e.g. smart glasses / implants – provide real-time data / information about environment / locations • Remote robotic surgery / monitoring of health by doctors / nurses – surgeon operates remotely in real-time – access to health care not available locally – increased health care leading to faster recovery • Health issues • Reliance on technology • Privacy / security issues	**6**

Question	Answer	Marks
5	**Six from:** • To determine if the new system meets the user / system / design specifications – set out by the analysts / designers (at the start of development) to determine any limitations / functions (that were in the specifications) – but cannot be carried out / are not fully working / producing unexpected / unwanted results • To determine if it is working / behaving overall as expected / designed to do • To determine if end-users are able to access / use it as required – so the database is easy to use / user-friendly – so makes the jobs of end-users easier / more difficult • To show if the system has any problems / expose any problems / shortcomings / errors – to determine how / if these affect its working / use – to determine / show opportunities / areas for future developer / programmers to add features / functions	**6**

Question	Answer	Marks
6	**Six from:** • Sets out the agreement / contract between the client and the developer – so client cannot demand / add new requirements / features to design / new system / product – so developer cannot claim to have finished when they have not completed new system • Defines what is to be produced • Defines what client wants new system to be able to do / purpose of new system / goal of new system / functional objectives of the new system • Defines how client wants new system to function • Defines where new system is to be located / how it is to be integrated into client business / how or where installed • Used to inform systems specification / other specifications • Used to inform the evaluation	**6**

Question	Answer	Marks
7	**Eight from:** **Command word: Discuss – write about issues(s) or topic(s) in a structured way.** **Max one from:** *Definition of virtual currency:* • A virtual currency represents an amount of money that is stored only in digital form • Can be represented by coupons / stamps / reward points **Max five from:** *Advantages:* • Use of cryptography during transactions increases security • Not regulated so value can change hands without oversight (1st) – with no records available to regulators (1) • Issuing company has a captive market • Goods / services can only be purchased from that company • Value stays the same when used in different countries • Transactions are faster than with physical currency **Max five from:** *Disadvantages:* • Use is restricted to members of specific (virtual) group / community / game environment that agree to use it • No connection to the real-world economy / no interchangeability with real currency • No intrinsic value / value because it depends on agreement between users / group / community / game environment • Not regulated so value depends on trust between users • Value can fluctuate widely as not regulated so can lose / gain money	**8**

Question	Answer	Marks
8(a)	**Two from:** • Determine the extent of threat to data / IT services • Enable production / use of resources to protect / defend against / mitigate the risk • Prioritise the resources to enable recovery / help prevent disaster • Allow creation of disaster recovery plan	**2**

Question	Answer	Marks
8(b)	**Four from:** • Identify / log / record risk • Use a risk matrix • Assign risk to a category e.g. high / medium / low or catastrophic, critical, marginal or negligible / suitable scale • Assign likelihood of disaster / suitable scale e.g. likely / possible / unlikely • Assign monetary cost to risk / use cost of risk prevention / recovery as scale • Collect expert opinion on level of risk • Experts assign value (e.g. 1 to 10 to aspect of risk) • Combine vales to give overall vale / level • Compare risk with other known risks	**4**

Question	Answer	Marks
9(a)	**Three from:** • Use of DHCP server (in the network) • NIC looks for a DHCP server • Using UDP (to communicate) • Sends a (dhcpdiscover) request on network (as it connects) • Server sends (dhcpoffer) / offers NIC an IP address • NIC sends (dhcprequest) and accepts IP address • Server acknowledges / sends ACK response with details of IP address (and other parameters).	**3**
9(b)	**Four from:** • Uniquely identifies NIC / device on the network • Has two parts identifying the network and the specific device / network address and device address • Destination / source IP address is in the packets (1st) in the header (1) • NIC recognises packet with its IP address (1st) it receives it / passes it to / up network stack of device for processing (1) discards / ignores all other packets (1) • Used by routers to send packets between devices on other networks / in routing of packets.	**4**

Question	Answer	Marks
10(a)	**Four from:** • `Onclick()` captures the mouse click • (when user) clicks on the text1 (in line 5) • Passes control to script line 7 / function in line 8 • id parameter is passed to function • `id.innerHTML` changes text in HTML <h2> (in line 9) • New text appears on web page.	**4**

Question	Answer	Marks
10(b)	**Two from:** *Examples of HTML events include, e.g.:* • When a web page has loaded • When an image has been loaded • When the mouse moves over an HTML element • When an input field is changed • When an HTML form is submitted • When a user strokes / touches / presses a key	**2**

Question	Answer	Marks
11	**Eight from:** ***Command word: Evaluate: judge or calculate the quality, importance, amount, or value of something.*** **Max eight from:** *Content areas could include e.g.:* • Distribution of useful information to citizens e.g. mass mailings – so can reach many citizens efficiently / quickly – but not all have email addresses / accounts – so not all receive the information • Updating of regulations – to targeted individuals / organisations • Advice and discussions on current issues – government news – feedback from citizens • Tracking of citizens – monitoring citizens emails – infringement of privacy / rights of citizens – tracking illegal activities • Sending false / distorted / biased information – dissemination of government views **Max one from:** *Conclusion:* • One mark for a reasoned conclusion / overall judgement	**8**