National
Qualifications
2017

2017 Computing Science

National 5

Finalised Marking Instructions

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General marking principles for National 5 Computing Science

This information is provided to help you understand the general principles you must apply when marking candidate responses to questions in this Paper. These principles must be read in conjunction with the detailed marking instructions, which identify the key.

(a) Marks for each candidate response must always be assigned in line with these general marking principles and the detailed marking instructions for this assessment.

(b) Marking should always be positive. This means that, for each candidate response, marks are accumulated for the demonstration of relevant skills, knowledge and understanding: they are not deducted from a maximum on the basis of errors or omissions.

(c) If a specific candidate response does not seem to be covered by either the principles or detailed marking instructions, and you are uncertain how to assess it, you must seek guidance from your Team Leader.

Marking instructions for each question

Question			Expected answer(s)	Max mark	Additional guidance
1.			Internal: links to another location within the same website (or domain)/web page **(1 mark)** External: links to another website (or domain) **(1 mark)**	**2**	
2.			Mantissa **(1 mark)** Exponent **(1 mark)**	**2**	Award 1 mark for "floating point"
3.			Boolean	**1**	No other answer
4.			Object/shape **(1 mark)** **(1 mark for)** Stored as a set of definitions/ properties/instructions/attributes **OR** Example of at least 2 attributes	**2**	
5.			png gif	**1**	Must be a bit-map file format with transparency
6.			rtf rich text format	**1**	Do not accept "loanadvice.rtf" as the file format has not been extracted (positive marking does not apply in this case).
7.			1.4/score/value is less than 2 **(1 mark)** Failed to qualify message is displayed or line 6 is executed **(1 mark)**	**2**	
8.	(a)		Every employee must have an ID	**1**	It is the primary key
	(b)		Graphic	**1**	Accept "object" Do not accept application specific terminology. For example "attachment","OLE".
9.			Interface	**1**	Do not accept "User Interface" or "Graphical User Interface"

Question			Expected answer(s)	Max mark	Additional guidance
10.			Wired: speed of data transfer is greater/increased security/less interference/improved stability **(1 mark)** Wireless: (explanation of) portability/no untidy or dangerous wires **(1 mark)**	**2**	Wired: "faster", "faster connection" on its own not enough Wireless: must state an advantage, not just "has no wires"
11.			Privacy mode settings or suitable description (private browsing, incognito browsing etc)	**1**	Consider all browsers Do not accept "delete history" as visited websites would still be saved.
12.			P Singh H Smith	**2**	Any more than two names written award 0 marks with the exception that the candidate may have put working which would justify one or more of their answers.
13.			Flowchart/Flow Diagram	**1**	
14.	(a)		Text	**1**	No other answer
	(b)	(i)	Data protection (Act)	**1**	
		(ii)	Must collect only relevant data **OR** Must only collect data for the purpose they have declared	**1**	Also accept: Must ensure collected data is accurate Make sure collected data is secure Inform subject data stored electronically Must register with registrar
	(c)		Removes data duplication **(1 mark)** Eliminates insert/delete/update anomalies or eliminates data inconsistences **(1 mark)**	**2**	

Question			Expected answer(s)	Max mark	Additional guidance
14.	(d)	(i)	In one table (club) it is unique/is a unique identifier **(1 mark)** In the other table (cyclist) it is used to link/form a relationship between the two tables **(1 mark)**	**2**	
		(ii)	Length check **OR** Check that it is 6 characters long	**1**	NOT restricted choice as it is in the club table
	(e)		ClubCode ascending **(1 mark)** Membership Number ascending **(1 mark)**	**2**	Award 1 mark for two fields (with the correct direction) written in the wrong order: "Membership Number ascending then ClubCode ascending"
15.	(a)		Only whole numbers can be accepted (can't have part of a parking space)	**1**	
	(b)	(i)	Address Bus	**1**	
		(ii)	Data Bus	**1**	
		(iii)	Arithmetic Logic Unit (ALU)	**1**	
	(c)	(i)	redAvailable = 0 **OR** redAvailable < 1	**1**	Do not accept "red level"
		(ii)	28	**1**	Units not required as in stem Allow calculation with 7 bit or 8 bit ASCII so accept "32".
	(d)		108	**1**	

Question			Expected answer(s)	Max mark	Additional guidance
15.	(e)	(i)	Any **one** from the following: • No need to leave the programming environment • Tracing facilities • Debugging facilities • Executes until error found allowing for easy identification of errors **(1 mark each)**	**1**	Note that both interpreters and compilers translate code one line at a time and return errors. Candidates answer must go further to distinguish between the two.
		(ii)	Executes/runs faster **(1 mark)** Doesn't need translator in memory **(1 mark)**	**2**	Answer must refer to running the **compiled program,** so do not accept "Complier runs faster".
16.	(a)		Any **two** from the following features: • Search (Bar) • Navigation bar visible at top of page • Breadcrumb **(1 mark each)**	**2**	Do not accept individual items of the navigation bar or breadcrumb as these would be links and not features.
	(b)		Any **one** from the following: • Search button • Login • Sort By/Drop down menu • Selection boxes on left • Cart	**1**	Accept answers where candidate has correctly annotated image on script showing use of Javascript.
	(c)		Inserted between the title tags	**1**	Accept answer where candidate has correctly annotated image on script showing that the text should be inserted between the <title></title> tags.

Question			Expected answer(s)	Max mark	Additional guidance
16.	(d)	(i)	Relative	**1**	
		(ii)	120 * 60 **(1 mark)** * 24 **(1 mark)** = 21·09KB **(1 mark – for correct division)**	**3**	If candidate makes only 1 error, marks should be awarded for the remaining calculation being carried out correctly. Accept • 21600 bytes • 21 KB • 21·1 KB • 0·02 MB Learners may have a varied experience of kilobytes or kibibytes. Accept the old and new definitions. Allow 21·09KiB, 21·09KB or 21·6 kB. Candidate may have multiplied by colour depth twice (120 x 24 x 60 x 24) giving an answer of 506·25KB. One error so award 2 marks.
		(iii)	Transfer speed increased	**1**	NOT smaller file size on its own because that is not a benefit to the user.
	(e)		Any **one** from the following: • Test hyperlinks work • Test layout • Media displays correctly/appropriately • Test scripts • User accessibility • Browser compatibility	**1**	

Question			Expected answer(s)	Max mark	Additional guidance

17.	(a)		(Conditional) loop **(1 mark)**
			Correct loop condition **(1 mark)**
			Input inside loop **(1 mark)**
			Display error message **(1 mark)**
				4	Example answers:
					While **(1)** bags < 2 or bags >6 **(1)**
					Display error message **(1)**
					Input bags from user **(1)**
					End While
					
					Repeat/Do
					Input bags from user **(1)**
					If bags <2 or bags >6
					Display error message **(1)**
					End If
					Until **(1)** bags >=2 and bags <=6 **(1)**
					
					Also accept alternative conditions
					Until bags >1 and bags <7
					While bags <=1 or bags >=7

	(b)		2 and/or 6 **(1 mark)** Normal **(1 mark)**	**2**	
	(c)	(i)	Execution (Runtime)	**1**	
		(ii)	Data type expected is number (integer); data entered is string	**1**	Entered the word three instead of the number 3. Do not accept invalid data type can't just restate the question
	(d)	(i)	When a mistake is made in the program code. **OR** When the rules of the programming language are broken.	**1**	
		(ii)	Any **one** from the following: • Syntax highlighting • Colour coded variable names • Automatic indentation • Bookmarking/flags errors • Comments on errors	**1**	Accept "Spell Check" only if the answer clearly shows how the spellchecker would identify the error to the user.

Question			Expected answer(s)	Max mark	Additional guidance
18.	(a)	(i)	(Quad core) processor	**1**	Allow "Memory" as an answer as virtual memory may not be required if more RAM is available to run several apps.
		(ii)	Any **one** from the following – **ONE** advantage and **ONE** disadvantage Advantages: • Capacity • Accessed from anywhere with internet connection • Files accessible from another device • Backup of data Disadvantages: • Relies on internet connection • Vulnerable to unauthorised access	**2**	
	(b)		Copyright	**1**	
	(c)		mp4 **OR** avi	**1**	Allow other types of video file Helpful link: https://fileinfo.com
	(d)		Any **one** from the following: • Fingerprint (Recognition/Scan) • Retina/Iris/Sclera (Recognition/Scan) • Face (Recognition/Scan) • Palm Prints/Veins/Geometry (Recognition/Scan) • Voice (Recognition)	**1**	Only accept correct terminology. For example do not accept "finger scan".
	(e)		Communication (Act)	**1**	

Question			Expected answer(s)	Max mark	Additional guidance
18.	(f)	(i)	More robust / no moving parts **OR** Faster access time	**1**	Do not accept portability as a mobile phone is always portable.
		(ii)	Any **two** from the following: • Recycle components • Properly dispose of dangerous elements • Re-use by others (selling it on) **(1 mark each)**	**2**	
19.	(a)		Fixed loop 100 repetitions **(1 mark)** Correct Input **(1 mark)** Assignment to array **(1 mark)**	**3**	Example answers: Repeat 100 times (1) Get input from keyboard (1) Store input in array/name (1) Repeat 100 times (1) Get input from keyboard (1) and store in array/name (1) For loop 1 to 100 times (1) Get name(loop) (1) from keyboard (1)
	(b)	(i)	& **OR** ampersand	**1**	Also allow + X AND
		(ii)	averageHours may require a decimal point **OR** Division may result in a real number	**1**	
		(iii)	An average of 4 hours rounding of 4·26 to 4 **(1 mark)** correct concatenation **(1 mark)**	**2**	
		(iv)	Round	**1**	Not int/floor/ceiling as the program should round not always round down or always round up.

Question			Expected answer(s)	Max mark	Additional guidance
19.	(c)	(i)	Can show clearly where one construct starts and finishes	**1**	
		(ii)	Any one from: • Internal commentary • White space • Meaningful identifiers **(1 mark each)**	**1**	
20.	(a)		Any **two** from the following: • Buttons are different sizes • Font changes throughout • Text size changes throughout • Text style changes throughout • Buttons are not aligned **(1 mark each)**	**2**	
	(b)		Any **one** from the following: • Sampling rate too low • Frequency rate too low • Sample depth too low	**1**	
	(c)	(i)	Network Interface Card **(1 mark)** Router **(1 mark)**	**2**	As a router is a hub/modem the following can be accepted: • hub/switch **instead** of router • modem **instead** of router An answer of "hub and modem" would therefore be awarded 2 marks.
		(ii)	Page zooming/zoom/magnify	**1**	
	(d)		Home page **(1 mark)** Five other named pages clearly shown as sub-pages of the home page **(1 mark)**	**2**	
	(e)	(i)	(Illegal) collection of personal details/sensitive information	**1**	
		(ii)	Any **one** from the following: • Spelling or grammar errors • No Home button • Link to bank accounts • Request to sign in to bank accounts • Asked to provide password	**1**	

[END OF MARKING INSTRUCTIONS]