

Annual Examinations for Secondary Schools 2022

YEAR 11	COMPUTING	MARKING SCHEME
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Directions to candidates:

Answer **ALL** questions on this paper.

The use of a flow chart template is permitted.

Calculators are **NOT** allowed.

Good English and orderly presentation are important.

For office use only:

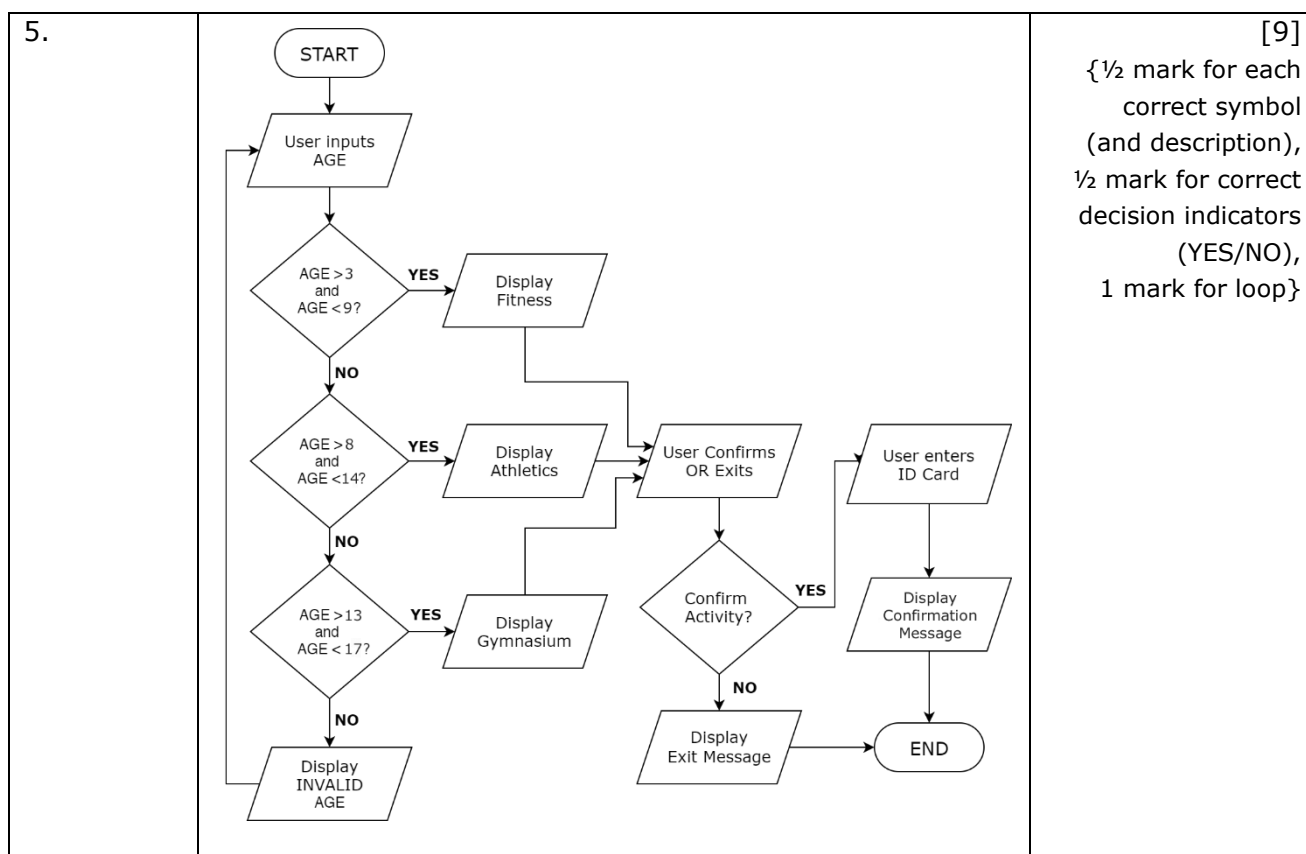
QUES	1	2	3	4	5	6	7	8	Final Mark
MAX	9	10	9	8	9	10	13	17	85%
MARK									

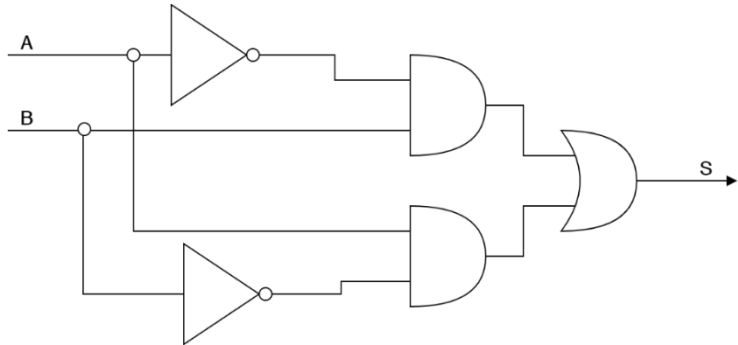
Question		Answer	Marks Allocation
1.	a)	Webmaster to create and maintain the website, Programmer to create a link between website and DB Data entry clerk to enter details related to aerobic performances in DB, etc. <i>{Accept relevant answers}</i>	[2]
	b)	4GL language – very high level, one line equivalent to 3GL lines, very productive, faster development. <i>{Accept relevant answers}</i>	[2]
	c) i.	Performance no.	[1]
	c) ii.	Performance no.	[1]
	c) iii.	Not ideal, it would be best to search by date or by country as it makes the searching process more user friendly. <i>{Accept relevant answers}</i>	[2]
	c) iv.	Encryption during data transfer, using Antivirus / Antimalware, firewall to protect the server. <i>{Accept relevant answers}</i>	[1]

2.	a)	<code>boolean[] donateOrgan = new boolean[6];</code>	[1]
	b)	For loop	[1]
	c)	While loop because it is not a predetermined loop and the number of loops required is known. <i>{Accept relevant answers}</i>	[2]
	d)	HLL is more abstracted from the hardware. <i>{Accept relevant answers}</i>	[1]
	e) i.	Compiler, Interpreter, Interpreter	[3]
	e) ii.	Yes, because Assembly language is not understood by the processor. <i>{Accept relevant answers}</i>	[2]

3.	a)	Processor Management and Memory Management. <i>{Accept relevant answers}</i>	[2]
	b)	1) Making the screen layout more intuitive, e.g. the 'Start' button more visible and reachable. 2) Introduce elements of a Natural User Interface. <i>{Accept relevant answers}</i>	[2]
	c) i.	Application Software	[1]
	c) ii.	System Software	[1]
	c) iii.	Application Software	[1]
	d)	Format Utility - Prepares a device for use and deletes anything on the device in so doing. <i>{Accept relevant answers}</i>	[2]

4.	a) i.	True	[1]
	a) ii.	True	[1]
	a) iii.	False	[1]
	b)	Volatile {Accept relevant answers}	[1]
	c)	Because most of the RAM will be taken up by the OS, leaving little memory for other apps to run without slowing down the overall system. {Accept relevant answers}	[1]
	d)	Hard Disk is a permanent type of storage used to store personal data. RAM is a temporary type of memory used to hold running apps. {Accept relevant answers}	[1]
	e) i.	Not Feasible because products' details need to be retrieved fast and in no particular order. {Accept relevant answers}	[1]
	e) ii.	It is feasible because data of all gym members need to be accessed one after the other. {Accept relevant answers}	[1]



6.	a)	<table><tr><th>A</th><th>B</th><th>S</th></tr><tr><td>0</td><td>0</td><td>0</td></tr><tr><td>0</td><td>1</td><td>1</td></tr><tr><td>1</td><td>0</td><td>1</td></tr><tr><td>1</td><td>1</td><td>0</td></tr></table>	A	B	S	0	0	0	0	1	1	1	0	1	1	1	0	[3] { 1 mark for deriving the inputs & outputs, 1 mark for input combination, 1 mark for correct output}
A	B	S																
0	0	0																
0	1	1																
1	0	1																
1	1	0																
	b)	$S = (\text{NOT}(A) \text{ AND } B) \text{ OR } (A \text{ AND NOT}(B))$ or $S = A \text{ XOR } B$	[2] { 1 mark for partially incorrect, 2 marks for correct answer}															
	c)		[5] { ½ mark for each input and output, ½ mark for each logic gate, 1 mark for correct flow} OR { 5 marks for correct XOR gate}															

7.	a)	Input: Water Level Sensor or Light Sensor Output: LED Strip or Red LED.	[2]
	b)	DATA: water in reservoir OR intensity of ambient light INFORMATION: Light emitted from Red LED or LED Strip	[2]
	c) i.	$81_{10} = 01010001_2$	[2] {1 mark for correct conversion and 1 mark for an 8-bit answer}
	c) ii.	$81_{10} - 54_{10} \rightarrow 81_{10} + (-54_{10})$ Answer = $01010001_2 + 11001010_2 = 00100001_2$	[3] {1 mark for converting 54 to binary, 1 mark for correct answer, and 1 mark for the working}
	c) iii.	No because that would cause an overflow error. {Accept relevant answers}	[2]
	c) iv.	Ethernet or WIFI {Accept relevant answers}	[2]

8.	a) i.	num of nights because variable names cannot include spaces. <i>{Accept relevant answers}</i>	[2]
	a) ii.	Name: String	[1]
		Beds: byte (<i>do not accept int</i>)	[1]
		Breakfast: (Boolean)	[1]
	b)	Transposition Error	[1]
	c)	do (beds < 1 beds > 3)	[2]
	d)	Range Check	[1]
	e)	The user may enter text or a decimal number rather than a whole number. <i>{Accept relevant answers}</i>	[1]
	f) i.	Cheaper, more environmentally friendly, etc. <i>{Accept relevant answers}</i>	[1]
	f) ii.	Laser Printer because it is fast and prints in high resolution. <i>{Accept relevant answers}</i>	[2]
	f) iii.	Raster because it prints pixels. <i>{Accept relevant answers}</i>	[2]
	g)	Used for gaming, to create special effects for movies, to edit photos (photography), etc., including description. <i>{Accept relevant answers}</i>	[2]