WWW.ALEVELAPI.COM

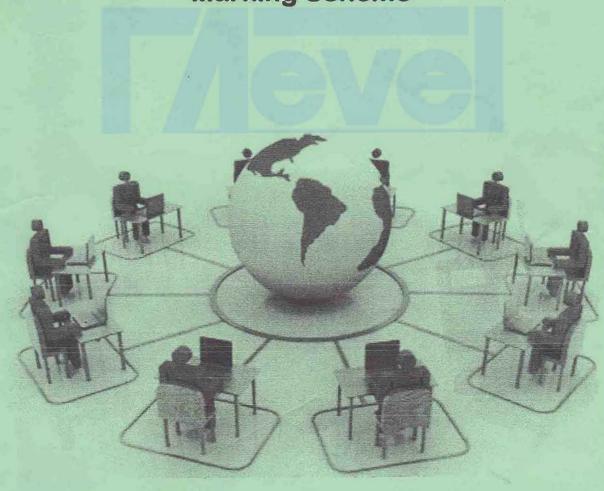


Department of Examinations - Sri Lanka

G.C.E. (A/L) Examination - 2017

20 - Information and Communication Technology

Marking Scheme



This has been prepared for the use of marking examiners. Changes would be made according to the views presented at the Chief/Assistant Examiners' meeting.

Amendments to be included.



20 - Information and Communication Technology

Distribution of marks

Paper I

Time Duration 02 hours

Number of Questions 50

Total Marks $50 \times 2 = 100$

Paper II

Time Duration 03 hours

Paper A - Structured Questions

Number of Questions 04

$$04 \times 10 = 40$$

Paper B - Essay Questions

Number of Questions 04

$$04 \times 15 = 60$$

Paper II Total marks = 40 + 60 = 100

Final marks =
$$\frac{pape\ I + Paper\ II}{2}$$
$$= \frac{100 + 100}{2} = 100$$

අ.පො.ස. (උ.පෙළ) චිතාගය/ க.பொ.த. (உயர் தர)ப் பரீட்சை - 2017

විෂයය අංකය பாட இலக்கம்

20

විෂයය பாடம்

තොරතුරු හා සන්නිවේදන තාක්ෂණය

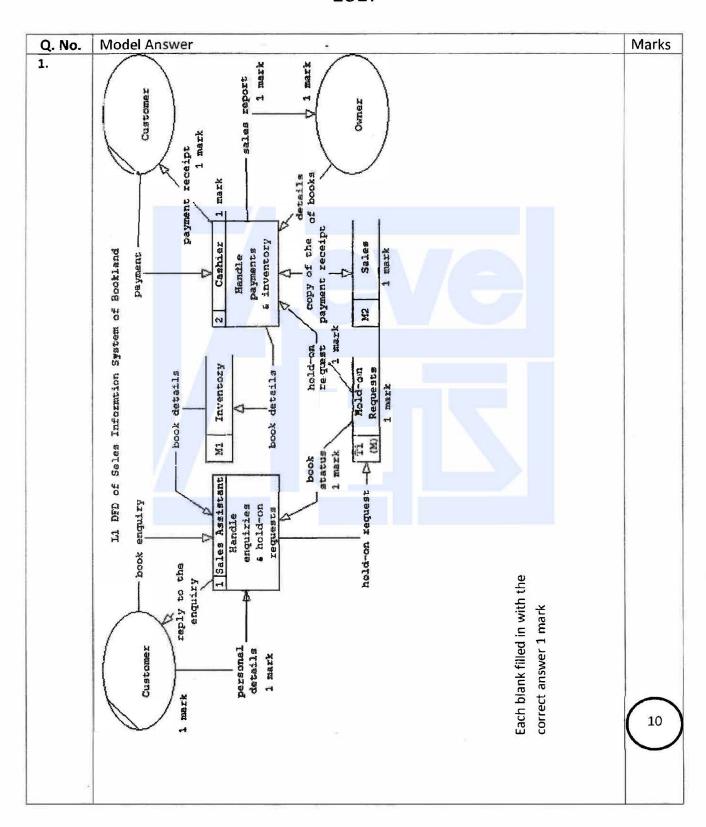
ලකුණු දීමේ පටිපාටි / புள்ளி வழங்கும் திட்டம் ි පතුය/பத்திரம் I

පුශ්න අංකය බෝ න ා නු ல.	පිළිතුරු අංකය ඛിණ ட இ ல.	පුශ්න අංකය බ ෝ නා මුහ.	පිළිතුරු අංකය ඛ්නා இல.	පුශ්න අංකය බෝනැ ඔුහ.	පිළිතුරු අංකය ඛාන ட இ ல.	පුශ්න අංකය බ්නැ இல.	පිළිතුරු අංකය ඛ්න ட இ ல.	පුශ්න අංකය බානා இහ.	පිළිතුරු අංකය ඛ්නාධ இහ.
01.	05	_ 11.	02	21.	03	31.	04	41.	05
02.	01	12.	04	22.	04	32.	01	42.	02
03.	05	13.	All	23.	01	33.	05	43.	04
04,	04	14.	01	24.	03	34.	04	44.	05
05.	03	15.	05	25.	05	35.	05	45.	02
06.	01	16.	04	26.	2 or 4	36.	05	46.	03
07.	05	17.	05	27.	01	37,	03	47.	05
08.	All	18.	03	28.	05	38.	03	48.	03
09.	01	= 19.	04	29.	02	39.	05	49.	05
10.	05	20.	03	30.	02	40.	02	50.	03

🗘 විශේෂ උපදෙස්/ ඛ්රිசட அறிவுறுத்தல் :

වක් පිළිතුරකට/ ஒரு சரியான விடைக்கு 02 ලකුණු බැගින්/புள்ளி வீதம் මුළු ලකුණු/மொத்தப் புள்ளிகள் 2 × 50 = 100

Information and Communication Technology (20) Paper II Part A 2017



2.(a)	Termination (end) of the process	1 x 3					
	Time out (end of the time sice)						
	Blocked for input/output operation	(3					
2.(b)	Store the current state of the running process in the PCB.	1					
	 Load the state of the process to be continued to the <u>CPU</u> from the PCB. 	2 or 0					
	 Transfer the control to the process to be continued. 	1					
	Note: Deduct 1 mark from the total if any one or both of PCB is missing)	4					
2.(c)	Power on self test (POST)/Executing or running BIOS	1 x 3					
	 Run the bootstrap program to load the O/S to the main memory. 	_					
	Transfer the control to the O/S.	(3					
3.(a).(i)	A transaction between two persons can be classified as B2B if following conditions are satisfied 1. It should be an online service/transaction.						
	2. The buyer should be a business user						
	3. The seller should be a business user	3					
3.(a).(ii)	If the seller is replaced by a software agent, then agent represents a business user. Therefore, main proactive behavior is to take actions that makes high (Increase) business profit.						
	Sa Sa						
3.(b).(i)	insert into student A [A only]	1					
	values('10001', 'Saman Kumara', '78, Mahara road, Maharagama') [A and B only]	2					
	[A, B and C]	3					
	В						
	or - insert se	tX					
	insert into student (student_no, name, address) -if A incor	red					
	insert into student (student_no, name, address) values('10001', 'Saman Kumara', '78, Mahara road, Maharagama')						
	values (10001, Saman Kumara, 78, Mahara 10au, Maharagama)						
	The order of the values in the values statement should be same as the order of						
	attributes in insert statement.						
	Note: All names should be as in the table definition.						
	Table 1 and the second of the	(3					

3.(b).(ii)	update student set address = '13, School Lane, Jaffna' A where student_no like '10001%' } B [A and B]	2 or 0 3			
	or				
	update student set address = '13, School Lane, Jaffna' where student_no like '10001' B A				
	update student set address = '13, School Lane, Jaffna' where student_no = '10001' } B (Note: The = sign only works for varchar type attributes)				
	Or				
	update student set address = '13, School Lane, Jaffna' (Assumption: Only one student record in the database) } B	(3)			
4.(a).(i)	Input Process Output Pectangle Trass orange				
	Rectangle no System boundary approx 2000 System box	chang 1			
4.(a).(ii)	In closed system both input and output are available within the system. Or	4 or 0			
	A sentence with the same meaning	4			
4.(b)	person(<u>NICNo</u>) mobilePhone(<u>TelephoneNo</u> , NICNo)				
	Each correct relation with attributes 1 mark Each primary key 1 mark (only if the relation is correct) 1: M relationship (No more than two relations)				
	Note: 1. If tables are drawn 1 mark for both correct tables. 2. Any form of words given in the question is acceptable	(

Information and Communication Technology (20) Paper II Part B 2017

Q. No.	Model Answer	Marks
1.(a)	Air-conditioner (Q) [Define outp	out] 1
	A B C Q [Correct input columns + 8 combinations] 0 0 0 1 0 [Correct output column] 0 1 0 1 0 1 1 0 1 0 0 0 1 0 1 0	1+1 2 or ((No Partio
	1 1 0 1 1 1 1 0. Q = A'.B.C' + A.B.C' = B.C'.(A'+A)	
	= B.C' complement law [Solution of Complement law]	on] 1
1.(b)	Yes. Input that represents Switch (A) is not in the Boolean expression/circuit/solution. Therefore, it is not required for the operation of the air-conditioner.	1 1 2

Since there are 4 subnets, it is required to divide the address range into 4 segments. For this, add two more bits to the subnet mask.

Subnet mask length becomes 10.

1111111.11000000.00000000.00000000

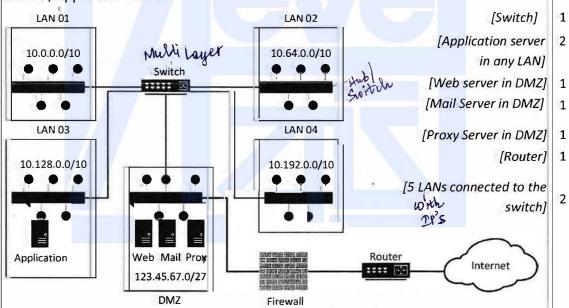
Therefore, the 4 subnets would be:

- 1. 00001010.00000000.00000000.00000000 = 10.0.0.0/10
- 2. 00001010.01000000.00000000.00000000 = 10.64.0.0/10
- 3. 00001010.10000000.00000000.00000000 = 10.128.0.0/10
- 4. 00001010.11000000.00000000.00000000 = 10.192.0.0/10

(if they decide to use /24 ranges, they should assume that 255 addresses are enough for each subnet. Then they should show the selection of /24 ranges.)

Note: If the selected ranges are shown in the diagram these 4 marks can be given

Needed Devices: **05 Hubs, Switch, Router**, Firewall, Web Server, Mail Server, Proxy server, Application Server.



Since any computer in any subnetwork can access resources in all subnetworks, the application server can be established in any subnetwork. Since it is for internal clients, it should not be located in the DMZ.

Note: 1. Proxy Server could be directly connect to the Switch

When the packet goes to the proxy server, its source IP address is rewritten with the public IP address of proxy server.

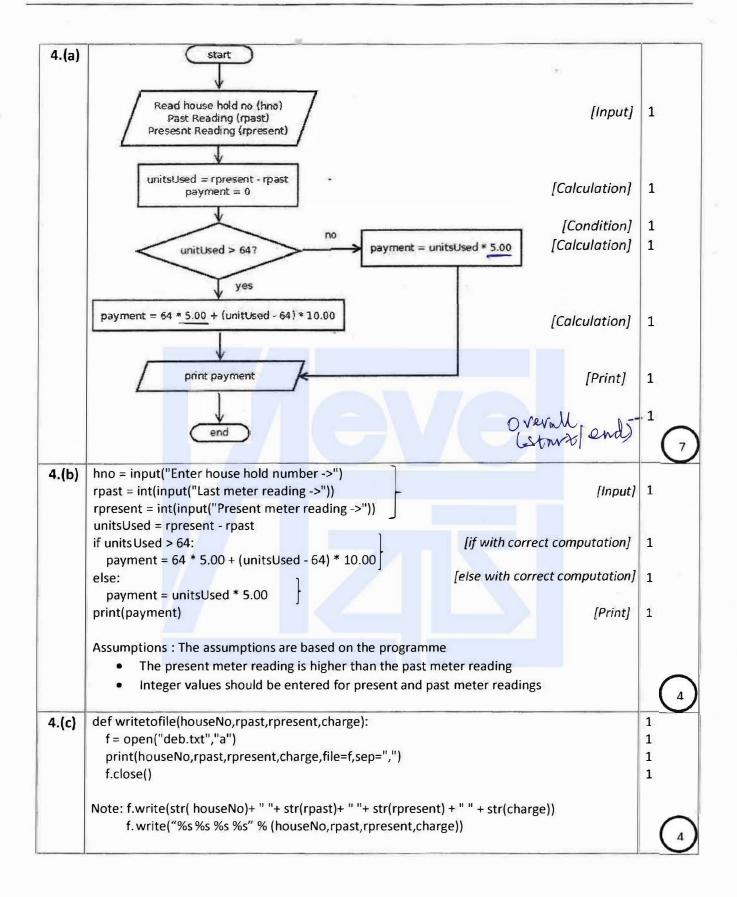
2

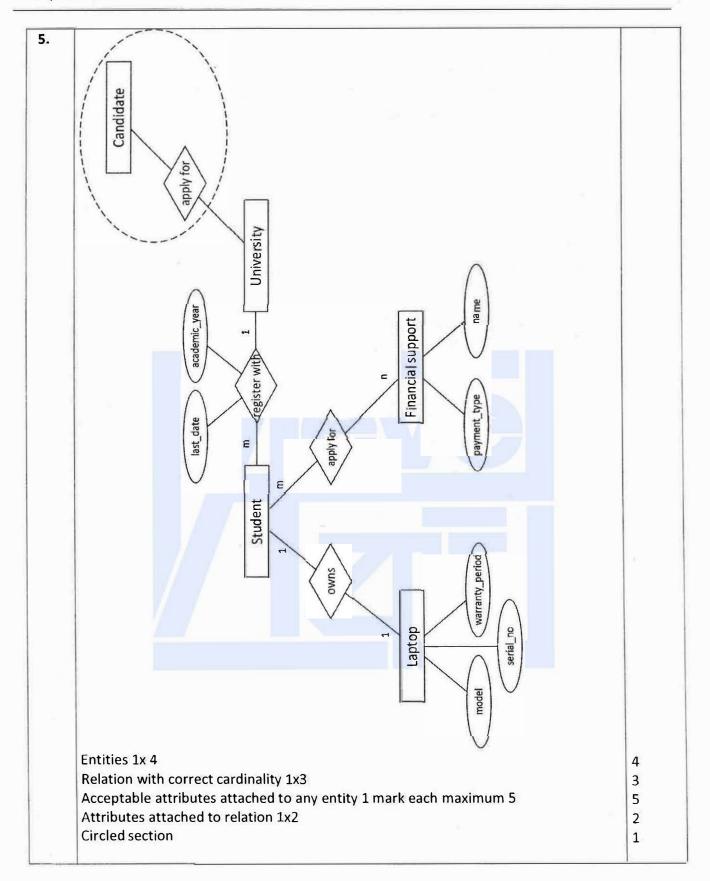
 $[1 \times 4]$



3.(a)	G2C or Government to Consumer	3
	Note: Government to Citizen only 2 marks	3
3.(b)	G2B or G2E, It is a service provided in online by the Government to Business or Employees.	1 1 2
3.(c)	Because it is a service provided by business to government . Therefore it is B2G.	1 5
3.(d)	Law: To prepare fine calculations mechanism according to the (criticality of the identified place). Epidemic Control Division: (To develop formula to measure the criticality of the identified place related to dengue breeding).	3 2 5







```
<html>
6.(a)
         <head>
             <meta charset="utf-8">
             <title>Information</title>
             <style> OR <style type="text/css">
                li{_
                    font-family: calibri;
                                                       [or "calibri"]
                    font-size: 14pt;
                    color: red;
                    list-style: square;
                                                        [or list-style-type]
         </style>
      OR <link rel="stylesheet" type="text/css" href="def.css">
         </head>
         <body>
             <h1>Student Art Competition</h1>
                                                            [At least 2 different levels]
             <h2>Theme: Litter on the environment </h2>
                                                                                        2
             <h3>PRIZES</h3>
             1st place Rs. 10,000/=
                2nd place Rs. 7,500/=
                                                                                        1
                3rd place Rs. 5,000/=
             <h3>ENTRY FORM</h3>
             Please fill and submit this <a href = "form.html" target = _blank>
                                                                                        2
                online entry form</a> to enter the competition. </P>
         </body>
      <html>
```

```
6.(b)
     <html>
         <head>
            <meta charset="utf-8">
            <title>Entry Form</title>
         </head>
         <body>
            <h1>Art Competition Online Entry Form 2017</h1>
            <h3>Theme: Litter on the environment</h3>
            <form method = "get" action = "script.php">
                                                                [<form> and </form]
                                                                                     1
                Name: <input type="text" name="name" >
                Gender:
               <input type="radio" name="sex" value="male" > Male
                                                                                     1
                <input type="radio" name="sex" value="female" > Female _
               Grade Category
                <select name="ageGroup">
                   <option value="g1">Grade 1 - 2</option>
                   <option value="g2">Grade 3 - 6</option>
                                                                                     1
                   <option value="g3">Grade 7 - 10</option>
                   <option value="g4">Grade 11 - 13</option>
                </select>
                Art media: 
                <input type="checkbox" name="media1" value="Colour" >
                          Water Colours
                <input type="checkbox" name="media2" value="Pencils" >
                           Colour Pencils
                                                                                     1
                <input type="checkbox" name="media3" value="Crayon" > Crayon
                <br />
                <input type="checkbox" name="media4" value="Chalk" > Chalk
                <input type = "reset" value = "Clear your Entries">
                                                                                     1
                <input type="submit" value="Submit" >
                                                                                     1
            </form>
         </body>
     </html>
```