

ICT – AL - 2016 (G.12) – July - FWC Examination - Scheme



Part - I

(1)	3	(11)	5	(21)	2	(31)	4
(2)	5	(12)	4	(22)	4	(32)	1
(3)	1	(13)	4	(23)	4	(33)	4
(4)	5	(14)	5	(24)	1	(34)	3
(5)	5	(15)	3	(25)	1	(35)	1
(6)	2	(16)	2	(26)	4	(36)	1
(7)	3	(17)	4	(27)	3	(37)	1
(8)	3	(18)	5	(28)	2	(38)	5
(9)	5	(19)	3	(29)	2	(39)	4
(10)	2	(20)	2	(30)	5	(40)	1

Part – II A Structured Essay – All questions

Note:- * Any other relevant answers.

Question No.		Marks
(1) (a)	$21_{10} = 00010101_2$ $-7_{10} = 11111000_2$	4 marks [2+2]
(1) (b)	$21_{10} = 00010101_2$ $-7_{10} = 11111000_2$ <hr/> 00001101 <hr/> 1 [add carry bit 1] <hr/> 00001110 ₂ <hr/> <hr/>	4 marks [1+1+1+1]
(1) (c)	$21_{10} = 00010101_2$ $-7_{10} = 11111001_2$ <hr/> 00001110 [discard carry bit 1] <hr/> <hr/> 00001110 ₂ <hr/> <hr/>	4 marks [1 + 1 + 1 + 1]
(1) (d)	<p>Simplex mode: one way communication is possible. Eg: Radio broadcasting.</p>	3 marks [1.5+1.5]

	Half duplex mode: two way communication is possible but not simultaneously. Eg: Walky-Talky	
(2) (a)	Books, Students	4 marks [2 + 2]
(2) (b)	<pre> erDiagram Books --o{ Students : Borrows Books { string bookId PK string title string author } Students { string memberId PK string name string address } Borrows { string BorrowedDate string ReturnedDate } </pre>	8 marks [3 entities -3, relationship -2, attributes -3]
(2) (c)	Books (<u>bookId</u> , title, author) Students (<u>memberId</u> , name, address) Borrows (<u>bookId</u> , <u>memberId</u> , BorrowedDate, ReturnedDate)	3 marks [1 + 1 + 1]
(3) (a)	<ul style="list-style-type: none"> (i) Coding / development (ii) System testing (iii) Problem definition (iv) System analysis 	4 marks [1 x 4]
(3) (b)	<ul style="list-style-type: none"> (i) A business organization sells products and services to another business organization through the Internet and world wide web. (ii) A business organization sells products and services to consumers through the Internet and world wide web. (iii) A Government provides services to their citizens through the Internet and world wide web. (iv) A business organization provides services to their employees through its intranet (or the Internet and world wide web). 	6 marks [1.5 x 4]

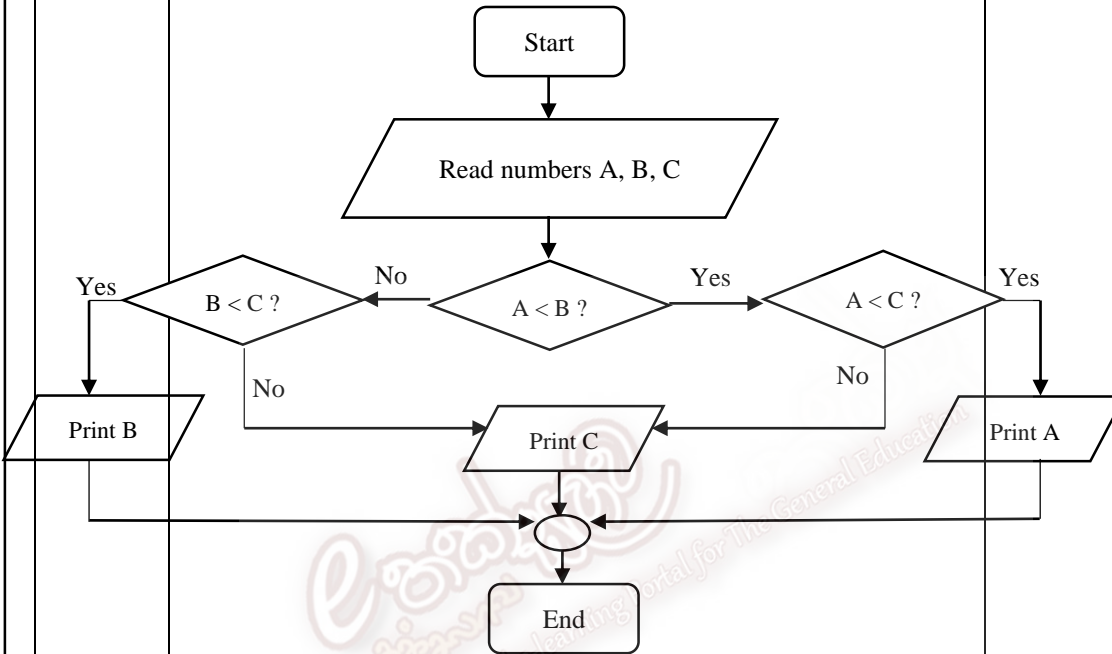
(3) (c)

- (i) Clerk
- (ii) Registration request
- (iii) Cancel a member
- (iv) Registration details
- (v) Member

5 marks [1 x 5]

(4) (a)

5 marks



(4) (b)

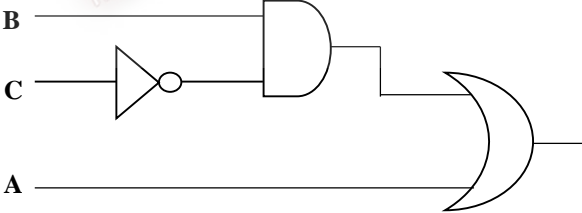
4 marks

```
a=int(input("Enter first number:"))
b=int(input("Enter second number:"))
c=int(input("Enter third number:"))

if (a<b):
    if (a<c):
        print(a)
    else:
        print(c)
else:
    if (b<c):
        print(b)
    else:
        print(c)
```

(4) (c)(i)	EmpNo – Identifier attribute EmpName – Composite attribute ProName – Simple attribute Hours – Descriptive attribute	4 marks
(4) (c)(ii)	Works (EmpNo, ProjNo, Hours)	2 marks

Part –II B Essay – Answer three questions only

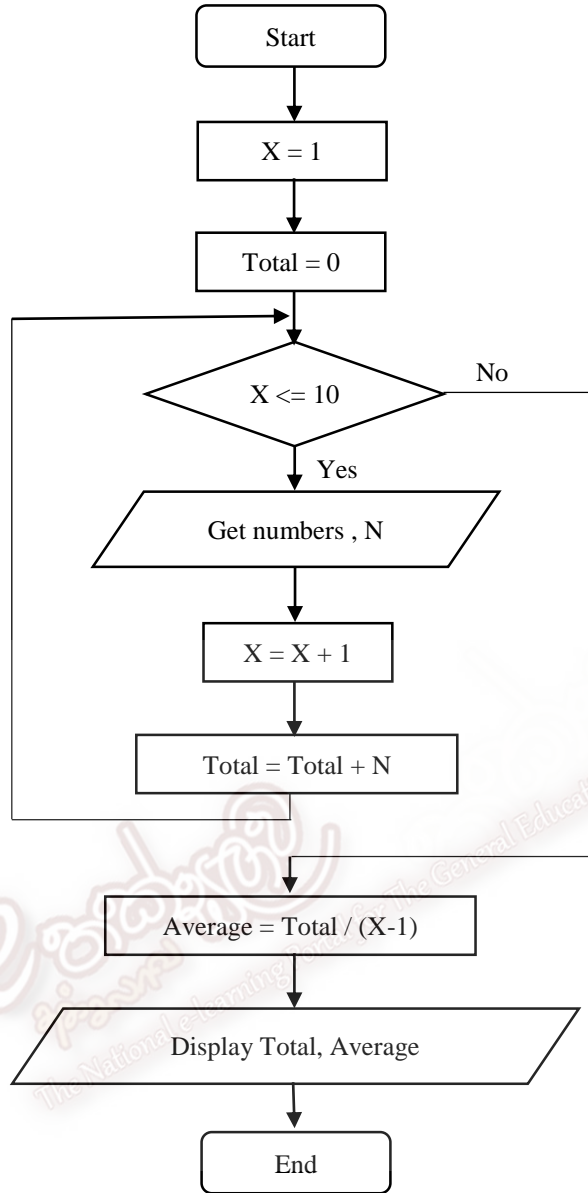
Question No.	Suggested Answers	Marks																																																															
(1) (a)	$A + B.\bar{C}$	5 marks																																																															
(1) (b)	<table border="1" data-bbox="483 857 1158 1184"> <thead> <tr> <th>A</th> <th>B</th> <th>C</th> <th>\bar{A}</th> <th>\bar{C}</th> <th>$B\bar{C}$</th> <th>$A + B.\bar{C}$</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td></tr> <tr><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>0</td><td>1</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr> <tr><td>0</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>1</td></tr> <tr><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td></tr> <tr><td>1</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td><td>1</td></tr> <tr><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td></tr> </tbody> </table>	A	B	C	\bar{A}	\bar{C}	$B\bar{C}$	$A + B.\bar{C}$	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	1	0	1	1	1	1	0	1	1	1	0	0	0	1	0	0	0	1	0	1	1	0	1	0	0	0	1	1	1	1	0	1	1	1	1	1	1	0	0	0	1	6 marks
A	B	C	\bar{A}	\bar{C}	$B\bar{C}$	$A + B.\bar{C}$																																																											
0	0	0	1	1	0	0																																																											
0	0	1	1	0	0	0																																																											
0	1	0	1	1	1	1																																																											
0	1	1	1	0	0	0																																																											
1	0	0	0	1	0	1																																																											
1	0	1	0	0	0	1																																																											
1	1	1	0	1	1	1																																																											
1	1	1	0	0	0	1																																																											
(1) (c)		5 marks																																																															
(1) (d)	$ABC + ABC\bar{C} + A\bar{B}C + \bar{A}B\bar{C} + A\bar{B}\bar{C}$	4 marks																																																															
(2) (a)	<p>A syntax error is an error in the syntax of a sequence of characters, punctuation, etc. Programming language can only execute a program if the syntax is correct; otherwise, the interpreter displays an error message.</p> <p>Eg: (1 + 2) is legal, but 8) is a syntax error.</p>	6 marks [3 + 3]																																																															

	A logical error produces unexpected output. If there is a logical error in program, it will run successfully in the sense that the computer will not generate any error messages, but it will not do the right thing. The meaning of the program (its semantics) is wrong.	
(2) (b)	<ul style="list-style-type: none"> • A message is displayed on the screen “Enter a number (or done)”. • User is expected to enter the enter a number or string done through the keyboard console. • User is able to enter numbers through keyboard console. • When the user enters the numbers, the total value of the numbers entered by the user is calculated. • Loop will terminate when user enters the string “done”, otherwise it obtains the numbers from the user. • Prints total value. 	6 marks [1 x 6]

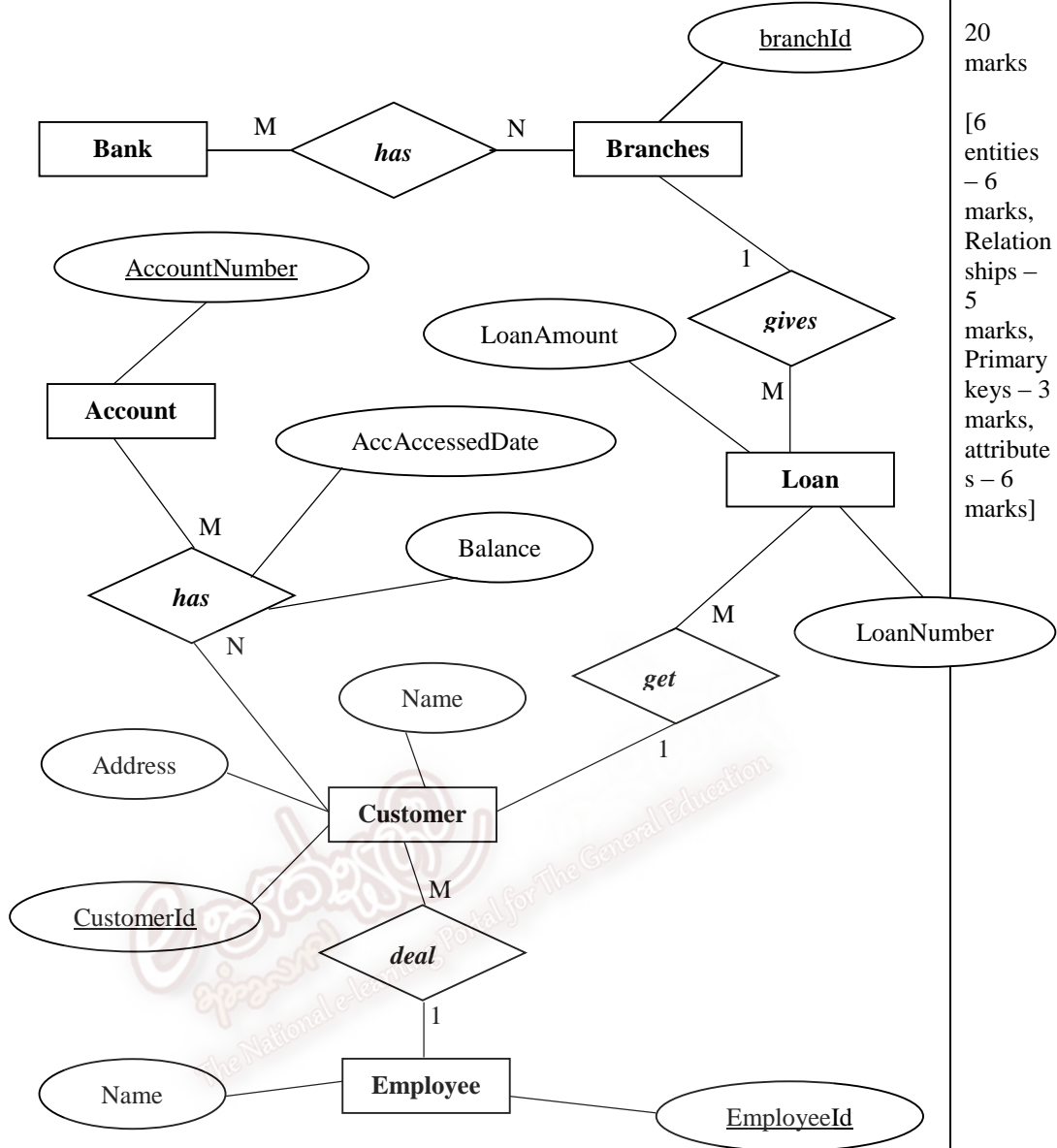


(2) (c)

8 marks



(3)



20 marks

[6 entities – 6 marks, Relationships – 5 marks, Primary keys – 3 marks, attributes – 6 marks]

(4) (a)

- Delays in repairing services.
- Customer dissatisfaction.
- Error in calculating salary of employees and delay.

3 marks

(4) (b)

- Avoids delays in repairing services, and receipts of money for services.
- Accuracy in calculating salary of employees.
- Improves customer satisfaction / Customer relationship.

6 marks

(4) (c)	<p>Functional requirement is a service expected by the user or the service provided by the system to user.</p> <ul style="list-style-type: none"> • “CarCare” shall be able to calculate salary of employees. • “CarCare” shall be able to calculate receipts for services. • “CarCare” shall be able to calculate employees’ work hours / shift time. 	<p>8 marks</p> <p>(definition – 2 marks + 3 x 2]</p> <p>IEEE system only accepted, actor must be.</p>
(4) (d)	B2E	3 marks

- Part – I** 2 x 40 = 80 marks
- Part – II A** 15 x 4 = 60 marks
- Part – II B** 20 x 3 = 60 marks

