A/L ICT Marking Scheme

2016 – November

2017 (Gr.13) Batch

Field Work Center (FWC)

Thondaimanaru

ICT
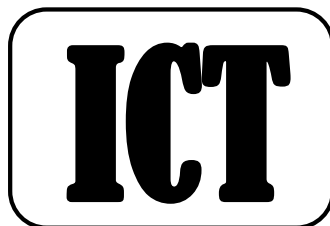
(1)	**1**	(11)	**4**	(21)	**5**	(31)	**5**	(41)	**5**
(2)	**2**	(12)	**2**	(22)	**4**	(32)	**5**	(42)	**5**
(3)	**3**	(13)	**2**	(23)	**3**	(33)	**4**	(43)	**4**
(4)	**2**	(14)	**5**	(24)	**1**	(34)	**4**	(44)	**5**
(5)	**2**	(15)	**5**	(25)	**2**	(35)	**4**	(45)	**3**
(6)	**1**	(16)	**5**	(26)	**4**	(36)	**3**	(46)	**1**
(7)	**3**	(17)	**2**	(27)	**2**	(37)	**1**	(47)	**5**
(8)	**3**	(18)	**4**	(28)	**5**	(38)	**5**	(48)	**5**
(9)	**1**	(19)	**1**	(29)	**2**	(39)	**4**	(49)	**1**
(10)	**5**	(20)	**5**	(30)	**3**	(40)	**4**	(50)	**1**

Part – II A Answers

Note:- * Any other relevant answers.
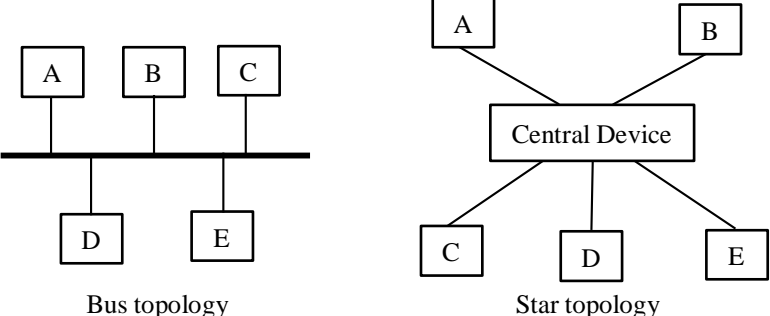
Question No.	Suggested answers	Marks
(1) (a)(i)	$A.(B + \bar{C}) + B.(C + \bar{D}) + B.D$	**2 marks**
(1) (a)(ii)	$A.(B + \bar{C}) + B.(C + \bar{D}) + B.D$ $= AB + A\bar{C} + BC + B\bar{D} + BD$ [Distributive Law] $= AB + A\bar{C} + BC + B(\bar{D} + D)$ $= AB + A\bar{C} + BC + B.1$ [Inverse Law] $= AB + A\bar{C} + BC + B$ [Identity Law] $= B(A + C + 1) + A\bar{C}$ $= B.1 + A\bar{C}$ $= B + A\bar{C}$	**3 marks**
(1) (b)	$19_{10} = 00010011_2$ $(-13_{10}) = 11110011_2$ $+$ ————————— **00000110_2** (discard carry bit 1)	**2 marks**
(1) (c)	**B2C – Business to Consumer** Bank provides services to the customers through its website/Internet. **C2B – Consumer to Business** Customers obtain services such as knowing account balance, and transactions through banking website/Internet.	**3 marks**

	B2E – Business to Employee Bank provides services to its employees (payments, transfer details) through its website/Internet.		
(2) (a)	**(i)** **<hr>** - Horizontal rule : separates contents / indicates thematic changes in the contents. **(ii) ** - Line Break: Inserts a single line break.	**4 marks**	
(2) (b)	<dl> <dt> Java </dt> <dd> Object-oriented programming </dd> <dt> Pascal </dt> <dd> Procedural programming </dd> </dl>	**3 marks**	

(2) (c)

	Marks		
Subjects	**Marks**		
Physics	89	92	

3 marks

(3) (a)	**(i)** **1 NF** - Table contains no repeating groups / should have atomic
	      values.
	(ii) **2 NF** - Table does not contain any partial dependencies.
	(iii) 3 NF - Table does not contain transitive dependency / every
	      determinant is key.
		3 marks	

(3) (b)	**(i)** No, Yes **(ii)** High, Low **(iii)** High, Low **(iv)** Low, High	**4 marks**	
(3) (c)	**Magnetic storage** : Hard disk, or any suitable example **Optical storage** : CD, or any suitable example **Solid-state storage** : Flash drive , or any suitable example	**3 marks**	
(4) (a)	**(i)** n<=5 **(ii)** # pro.py **(iii)** cal() **(iv)** n, sum	**4 marks**	

| (4) (b)	1 3 6 10 15	
		3 marks
(4) (c)	Width of the address bus = 32 - bits No. of unique addresses = 2^{32} Max. usable size of memory = 2^{32} bytes $\qquad\qquad\qquad\qquad$ = 2^{22} KB	**3 marks**

Part –II B Answers

Question No.	Suggested Answers	Marks
(1) (a)	$PT + \overline{W}\overline{T}$	**2 marks**
(1) (b)		**6 marks**

<div align="center">

P	T	W	$\overline{W}$	$\overline{T}$	PT	$\overline{W}\,\overline{T}$	$PT + \overline{W}\overline{T}$
0	0	0	1	1	0	1	**1**
0	0	1	0	1	0	0	**0**
0	1	0	1	0	0	0	**0**
0	1	1	0	0	0	0	**0**
1	0	0	1	1	0	1	**1**
1	0	1	0	1	0	0	**0**
1	1	0	1	0	1	0	**1**
1	1	1	0	0	1	0	**1**

</div>

(1) (c)		**4 marks**
(1) (d)	$\overline{P}\overline{T}\overline{W} + P\overline{T}\overline{W} + PT\overline{W} + PTW$	**3 marks**
(2) (a)	Attendances of each student could be easily managed / up-to-date. The Internet usage of students could be controlled with limit. Academic details of each student could be easily managed / up-to-date. *	**4 marks**

(2) (b)	Data privacy / Security issues.	**3 marks**
(2) (c)	Using of data encryption / password. *	**2 marks**
(2) (d)	The academic / examination results details of students should be able to store in this card. The Internet usage details of students should be able to store in this card. The card shall be able to read by card readers. *	**6 marks**

(3) (a)	 Bus topology Star topology	**4 marks**
(3) (b)	Improved Security / privacy / Confidentiality. Authentication / Integrity.	**4 marks**

(3) (c)				**4 marks**

	Optical fiber cable	**Co-axial cable**
Cost	High	Low
Made of	Glass tube / fiber glass	Copper
Data rate	High	Low
Immunity	High	Low

(3) (d)	IP address Subnet mask Default gateway *	**3 marks**

(4) (a)	**Compiler** is a translator program which converts **entire source code** written in a programming language into object code / machine code at a time. **Interpreter** is a translator program which converts source code written in a programming language into object code / machine code **a line at a time**.	**4 marks (2 x 2)**
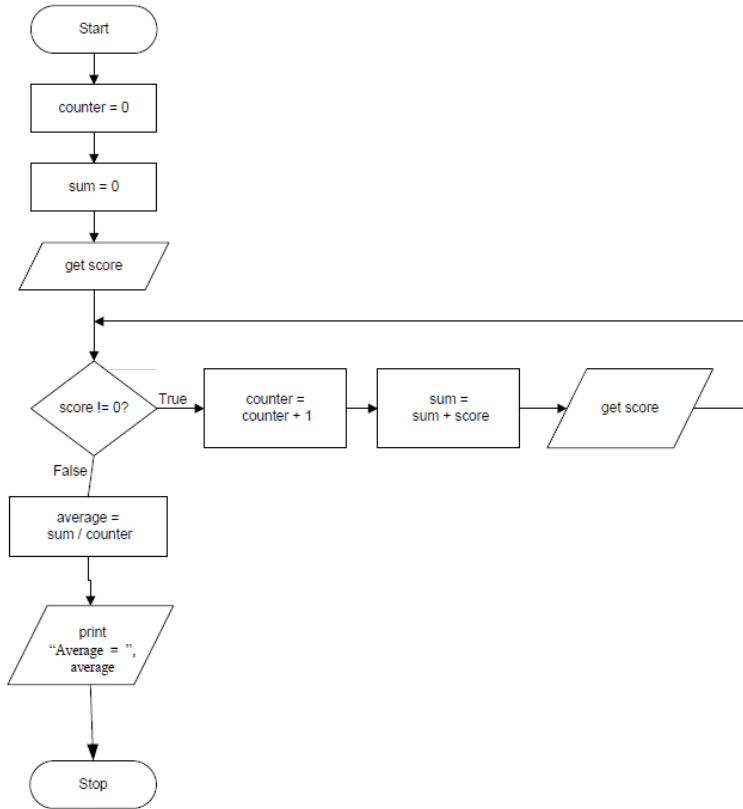
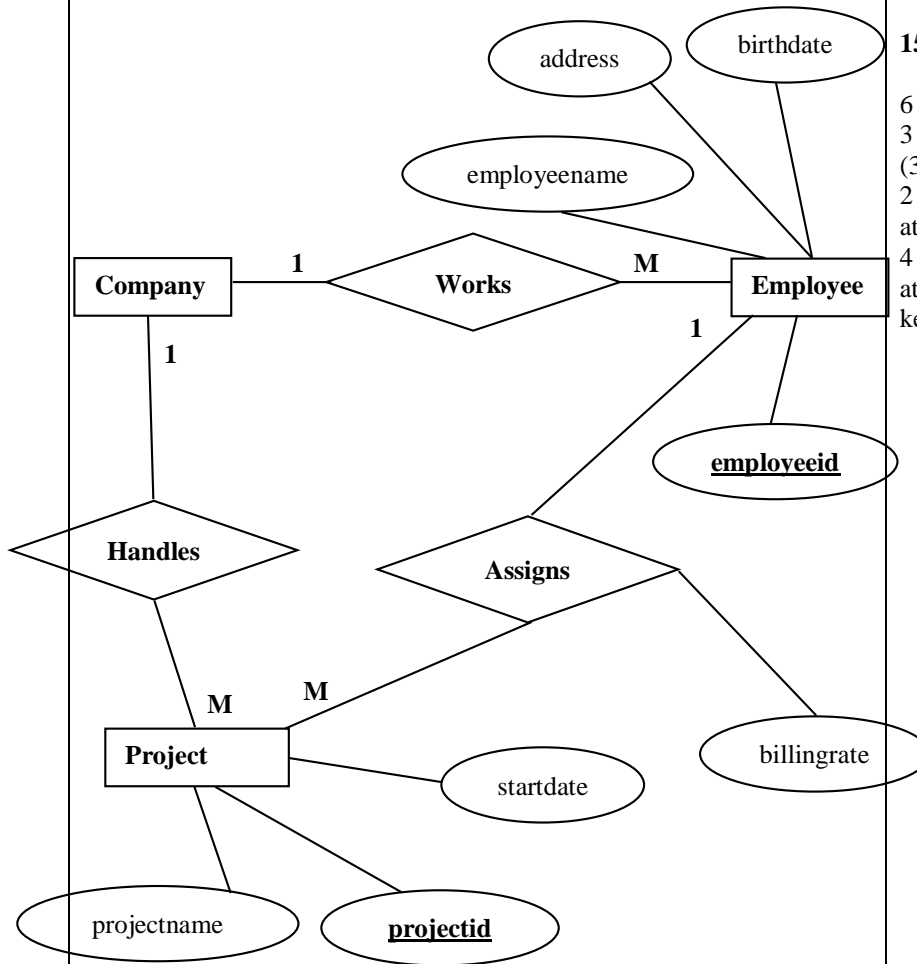|		
(4) (b)		**5 marks**
| **(4) (c)** | ```
counter=0
sum=0
score=int(input('Enter score:'))
while score!=0:
    counter=counter+1
    sum=sum+score
    score=int(input('Enter score:'))
average=sum/counter
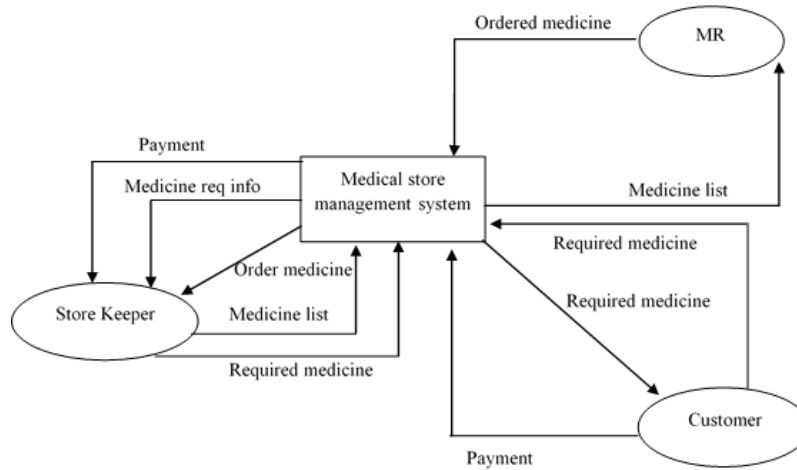print('Average=',average)
``` | **6 marks** |

(5)

15 marks

6 marks – entities (3x2)
3 marks – relationships (3x1)
2 marks – descriptive attribute
4 marks for remaining attributes with primary keys

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(6) (a)

15 marks

2 – system
3 – external entities
10 – 1 for each data flows

Part – I   2 x 50 =100 marks **Part – II A**   10 x 4 = 40 marks   **Part – II B**   15 x 4 = 60 marks

200 / 2 = 100 marks

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