A/L ICT Marking Scheme

2016 – November

2017 (Gr.13) Batch

Field Work Center (FWC)

Thondaimanaru

ICT

Part I – Answers

(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**

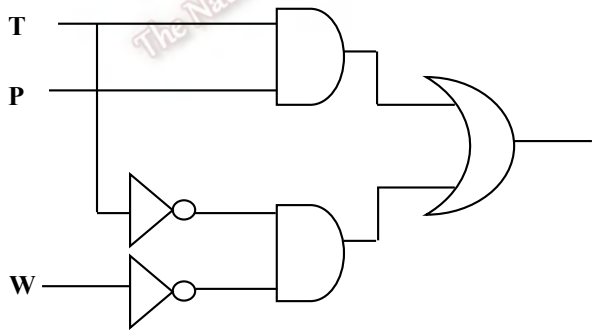
	B2E – Business to Employee Bank provides services to its employees (payments, transfer details) through its website/Internet.	
(2) (a)	**(i) <hr>** - Horizontal rule : separates contents / indicates thematic changes in the contents. **(ii) ** - Line Break: Inserts a single line break.	**4 marks**
(2)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

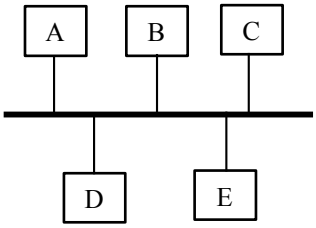
(4) (b)	1 3 6 10 15	**3 marks**
(4) (c)	Width of the address bus = 32 - bits No. of unique addresses = 2^{32} Max. usable size of memory = 2^{32} bytes = 2^{22} KB	**3 marks**

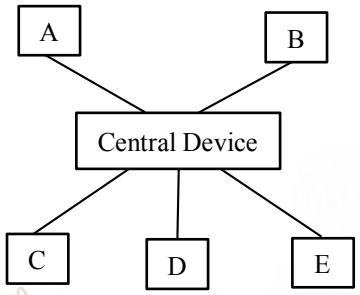
Part –II B Answers

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

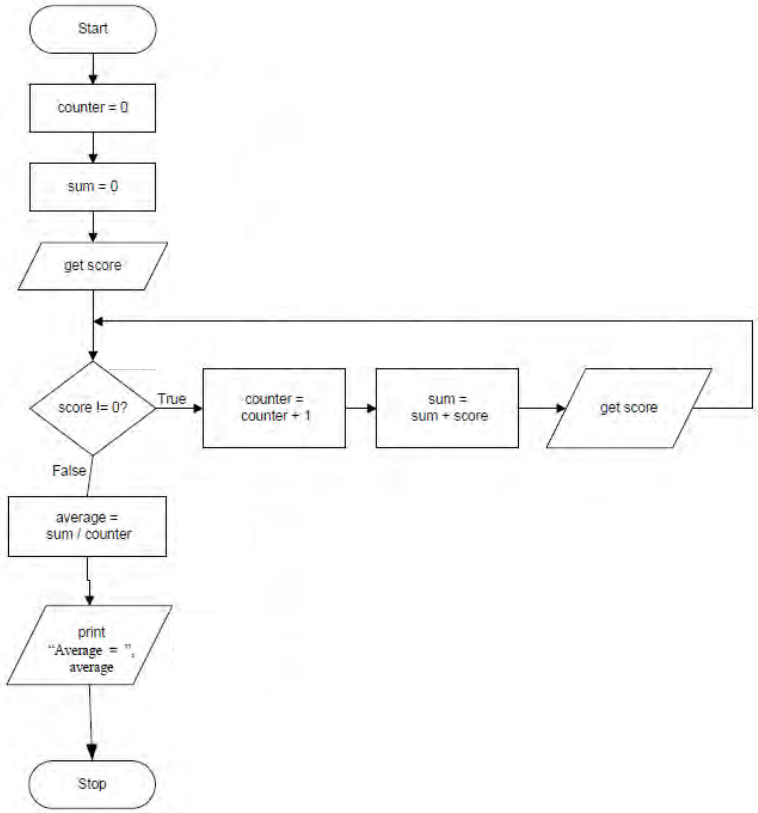
P	T	W	$\overline{W}$	$\overline{T}$	PT	$\overline{W}\,\overline{T}$	$PT + \overline{W}\overline{T}$
0	0	0	1	1	0	1	**1**
0	0	1	0	1	0	0	**0**
0	1	0	1	0	0	0	**0**
0	1	1	0	0	0	0	**0**
1	0	0	1	1	0	1	**1**
1	0	1	0	1	0	0	**0**
1	1	0	1	0	1	0	**1**
1	1	1	0	0	1	0	**1**

(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**

<table>
<tr><td>(2) (b)</td><td>Data privacy / Security issues.</td><td>3 marks</td></tr>
<tr><td>(2) (c)</td><td>Using of data encryption / password. *</td><td>2 marks</td></tr>
<tr><td>(2) (d)</td><td>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. *</td><td>6 marks</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>(3) (a)</td><td> 

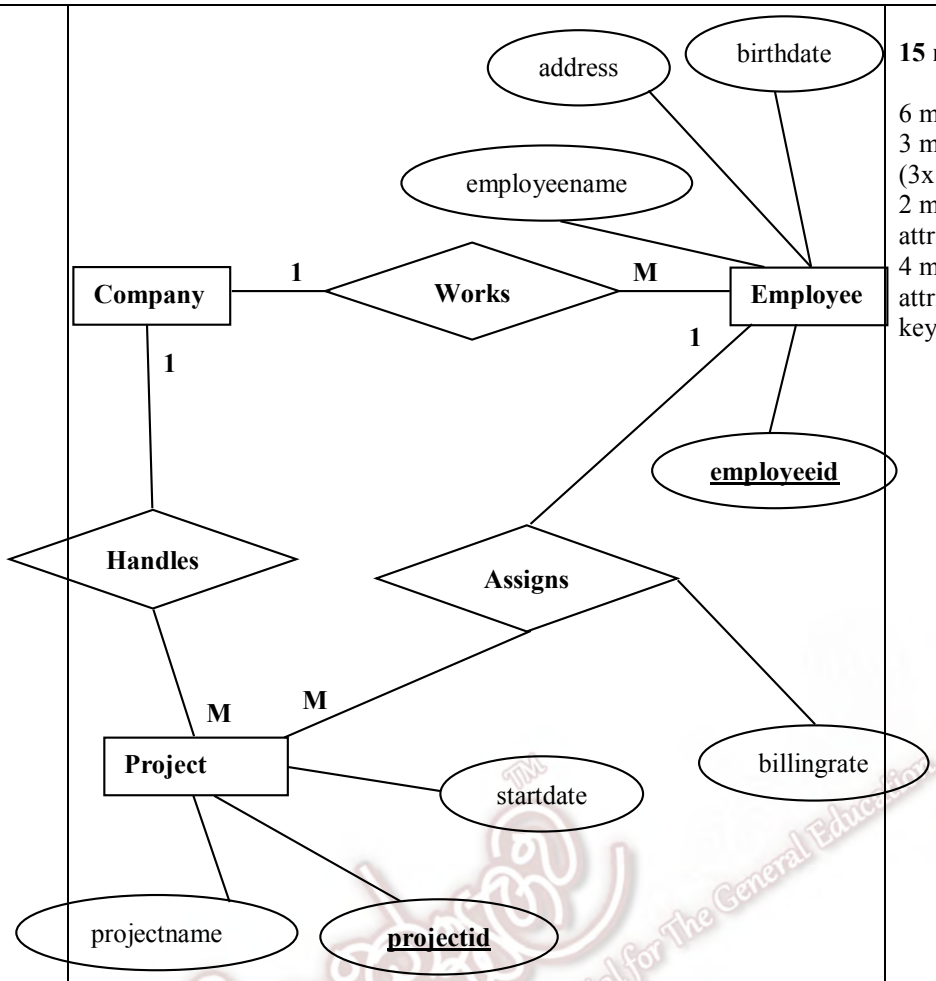
Bus topology


Star topology</td><td>4 marks</td></tr>
<tr><td>(3) (b)</td><td>Improved Security / privacy / Confidentiality. Authentication / Integrity.</td><td>4 marks</td></tr>
<tr><td>(3) (c)</td><td><table>
<tr><th></th><th>Optical fiber cable</th><th>Co-axial cable</th></tr>
<tr><td>Cost</td><td>High</td><td>Low</td></tr>
<tr><td>Made of</td><td>Glass tube / fiber glass</td><td>Copper</td></tr>
<tr><td>Data rate</td><td>High</td><td>Low</td></tr>
<tr><td>Immunity</td><td>High</td><td>Low</td></tr>
</table></td><td>4 marks</td></tr>
<tr><td>(3) (d)</td><td>IP address
Subnet mask
Default gateway *</td><td>3 marks</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>(4) (a)</td><td>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.</td><td>4 marks (2 x 2)</td></tr>
</table>

(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

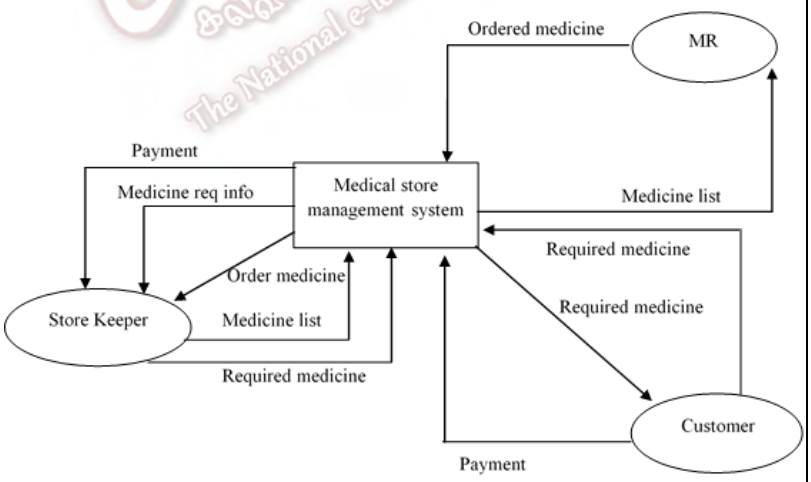
(5)



15 marks

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

(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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