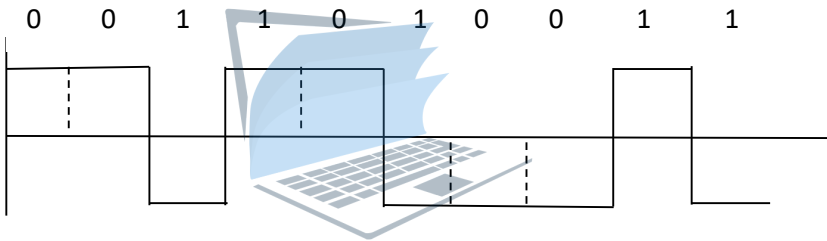


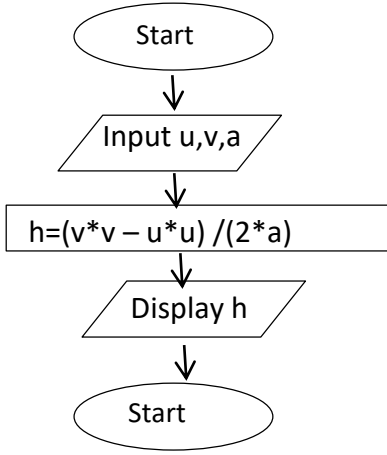


Q.No	Ans	Q.No	Ans	Q.No	Ans
01)	3	11)	1	21)	1
02)	4	12)	2	22)	1
03)	2	13)	3	23)	2
04)	4	14)	1	24)	2
05)	5	15)	2	25)	3
06)	3	16)	1	26)	3
07)	1	17)	4	27)	3
08)	3	18)	5	28)	3
09)	4	19)	5	29)	2
10)	3	20)	1	30)	2

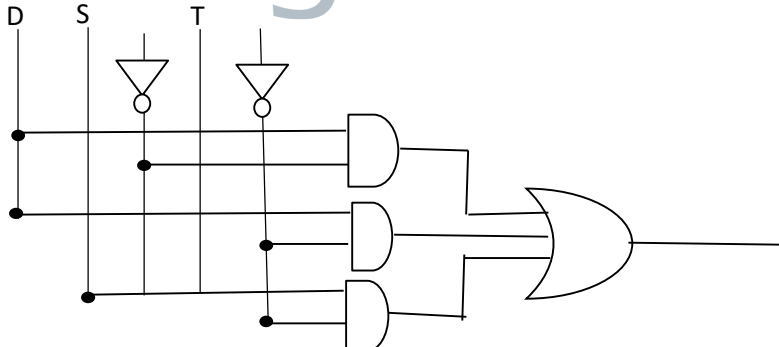
Part II A Structured Essay

Question No.	Model Answer	Marks
1. a)	1. True 2. True 3. True 4. False 5. True	2 .5marks
1. b)	F → E → B → D	1.5 marks No Partial Marks
1. c)	i. 19 = 00010011 ₂ 72 = 01001000 ₂ -72 1's = 10110111 ₂ -72 2's = 10111000 ₂	2 marks
	ii. 19 = 00010011 ₂ -72 2's = <u>10111000₂</u> <u>11001011₂</u>	1 marks
	iii. No. -2 ^{N-1} to +(2 ^{N-1} -1) here N = 8(8bits) So, the range is -128 to +127 5-150 calculation is overflow of 8 bits 2's complement.	2 marks

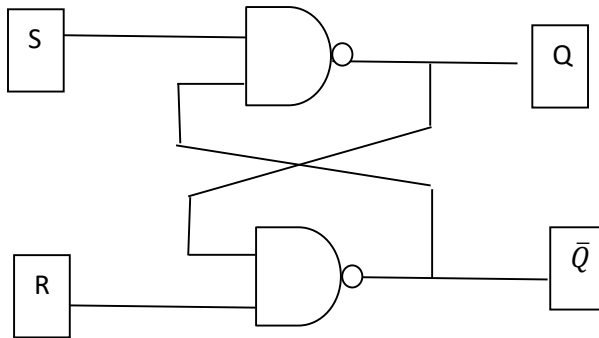
	iv. Two's complement only one value for zero Negative Number as perform like positive number.	1 marks													
02. a) (i)	Identify the physical address or frame and corresponding logical address or virtual address or page.	2 marks													
02. a) (ii)	<table border="1"> <thead> <tr> <th>Present level</th><th>next possible state</th><th>condition for transition</th></tr> </thead> <tbody> <tr> <td rowspan="2">New/ created</td><td>ready</td><td>admit</td></tr> <tr> <td>swapped out and waiting</td><td>admit</td></tr> <tr> <td rowspan="2">Ready</td><td>Running</td><td>dispatch</td></tr> <tr> <td>swapped out and waiting</td><td>suspend</td></tr> </tbody> </table>	Present level	next possible state	condition for transition	New/ created	ready	admit	swapped out and waiting	admit	Ready	Running	dispatch	swapped out and waiting	suspend	2marks
Present level	next possible state	condition for transition													
New/ created	ready	admit													
	swapped out and waiting	admit													
Ready	Running	dispatch													
	swapped out and waiting	suspend													
02. a) (iii)	1. frame 2. swapping 3. Response time	3 marks													
02. b) (i)	Fibre optic cable	1 marks													
02. b) (ii)		2 marks													
03. a) (i)	Functional requirement: Any requirements which specifies what the system should do or provide for users. Non-functional requirements: Any requirement which specifies how the system performs a certain functional or system works.	4 marks													
03. a) (ii)	A,B,D,E,H	2.5 marks													
03. b) (i)	ONF	1.5 marks													
03. b) (ii)	Car(<u>Carno</u> , Carname, type) CarColour(<u>Carno</u> , <u>Colour</u>)	2 marks													
04. a) (i)	A- Data Validation B- Data Processing C- Data output	2 marks No Partial Marks													
04. a) (ii)	Presence check Format check Range check	2 marks [1+ 0.5+ 0.5]													
04. a) (iii)	Interviews Observations Questionnaires	2 marks													

04. b) (i)	 <pre> graph TD Start([Start]) --> Input[/Input u,v,a/] Input --> Process[h=(v*v - u*u)/(2*a)] Process --> Output[/Display h/] Output --> End([Start]) </pre>	2 marks [Input,out put -01, process - 01]
04. b) (ii)	Begin Input A,B If (A>B) then Display A else Display B end if End. 	2 marks [if condition -01 Input, output - 01]

Part II B Essay

01. a)	$D(\bar{S} + \bar{T}) + S\bar{T}$	3 marks																																																															
01. b)		3 marks																																																															
01. c)	<table><tr><th>D</th><th>S</th><th>T</th><th>$D\bar{S}$</th><th>$D\bar{T}$</th><th>$S\bar{T}$</th><th>$D\bar{S} + D\bar{T} + S\bar{T}$</th></tr><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td></tr><tr><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td></tr><tr><td>1</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td></tr><tr><td>1</td><td>1</td><td>0</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>0</td></tr></table>	D	S	T	$D\bar{S}$	$D\bar{T}$	$S\bar{T}$	$D\bar{S} + D\bar{T} + S\bar{T}$	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	1	0	1	1	0	0	0	0	1	0	0	1	1	0	1	1	0	1	1	0	0	1	1	1	0	0	1	1	1	1	1	1	0	0	0	0	4 marks
D	S	T	$D\bar{S}$	$D\bar{T}$	$S\bar{T}$	$D\bar{S} + D\bar{T} + S\bar{T}$																																																											
0	0	0	0	0	0	0																																																											
0	0	1	0	0	0	0																																																											
0	1	0	0	0	1	1																																																											
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1	0	0	1	1	0	1																																																											
1	0	1	1	0	0	1																																																											
1	1	0	0	1	1	1																																																											
1	1	1	0	0	0	0																																																											

01.
d)



S	R	Q	$\bar{Q}$
1	0	0	1
1	1	0	1
0	1	1	0
1	1	1	0
0	0	1	1

Set
Remember
Reset
Remember
Invalid

2 marks

3 marks

02.
a)

	IP Address	Class	netid	hostid
1	200.10.7.5	C	200.10.7	5
2	110.100.10.10	A	110	100.10.10
3	10.7.4.100	A	10	7.4.100
4	156.7.7.4	B	156.7	7.4

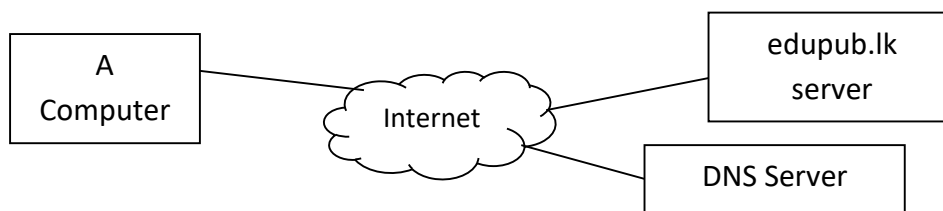
4 marks

02.
b)

1. SMTP – Application Layer
2. UDP - Transport Layer
3. ICMP - Network Layer
4. Hub - Physical Layer
5. NetBIOS - Session Layer
6. Router - Network Layer
7. IP - Network Layer
8. Switch – Datalink Layer
9. TCP - Transport Layer
10. PPP - Datalink Layer

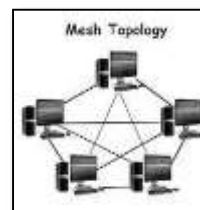
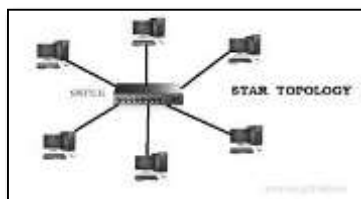
5 marks

02.
c)



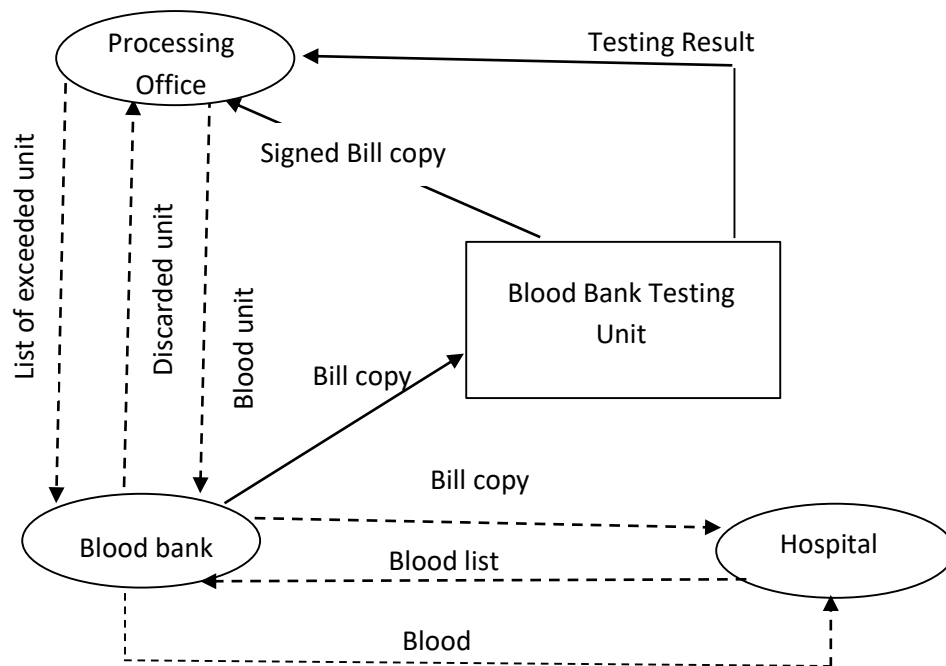
4 marks

02.
d)



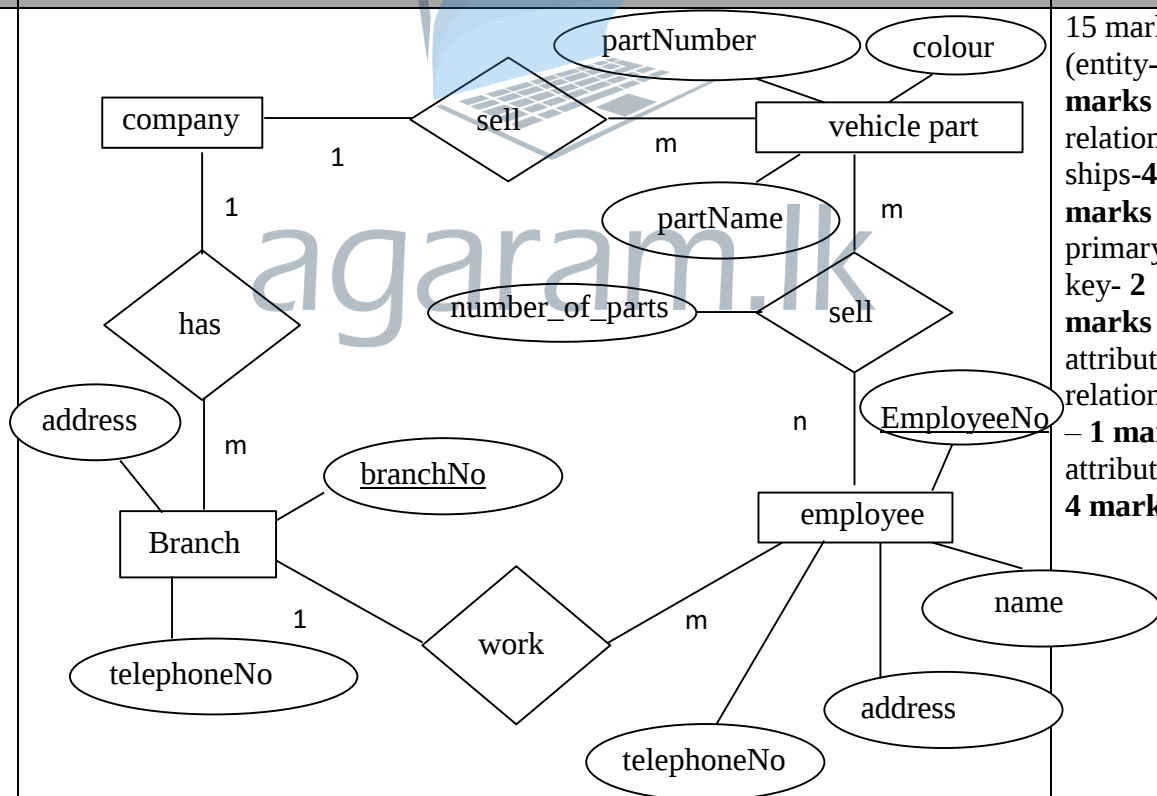
2 marks

03.



15 marks)
(System – 2
marks
External
entity -3
marks
data flows –
9 marks
all are
correct – 1
mark)

04.



15 marks
(entity- 4
marks
relation
ships-4
marks
primary
key- 2
marks
attribute in
relation ship
– 1 mark
attributes –
4 marks)

Part – I 1X30 = 30 marks

Part – II A 10X4 = 40 marks

Part – II B 15X2 = 30 marks