Mid-term paper

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.

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Computer fundamentals

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Question No "1"

Role of compter and its importance :-

Computer are now a fact of life. The Computer have created a very effective information System to help streamline the managment of an organization. This make it a much needed tool for every business, banking, government, daily life. In the role daily life computer use also home to control safety and control of air conditioning and lighting - The use of computer is to provide connection to the national data bank. it can use for storing the personal data in daily life. it is clear that computers have become machine of information in our society.

Being a computor engineer. Computer uses :-

Being a Computer engineer, I say that a slot of industry benefit from computer and the development of a human machine that "robot" industrial production, for example a lot of Computers process data collected for employees, Customers, Sales, product information, production schedules, and so on - So Computer used to control the production process

Advancement in computer field $19^{th}-20^{th}$ Century :-

In the venturing of the events in 20th century, it will be convenient to separate the years before 1945 from those that followed. The years 1900 to 1945 were dominated by the two world wars - Many important invention of 20th century originated there. There were no fuel and power foundamental innovations before 19th century, but there were several significient development in techniques that had origineted in the previous century.

| RAM	Cache memory	Registers	Haddsk
1) Volatile memory required power to hold data.	1) Very fast memory hold common and recent store data	1) Alu and FPU have private memory Called register	1) Hardisk is permanent data storing device.
2) Data in RAM is has specific address and cpu can read data address.	2) Enhanse the speed of the data by decreasing burden on RAM	2) Small amount but Super fast.	2) Very slow as compared to RAM and cache.
3) Data is first loaded in RAM for processing.	3) More cache made up the computer fast	3) Aslo called accumulator.	3) But large amount of data and instruction are stored by hardisk.
4) RAM is installed on the motherboard in the memory slot.	4) Cache is divided into three categories Cache 1 — recently	4) Handle recent data and then send the data to data cache.	4) Three types of hardisk i) Magnetic devices
5) Have Pins to store data.	Cache2 — Upcoming instruction	5) Store set of instruction which is executed at microproscer.	ii) Optical devices
	Cache 3 — possible upcoming.		iii) solid-state devices

A without storge device :-

The computer will not perform an important function such as booking and loading data and instruction for processing. And the operating will not load without RAM or hardisk.

Question No "4"

a) $(1801)_{10}$ to binary

2	1801	
2	900	1
2	450	0
2	225	0
2	112	1
2	56	0
2	28	0
2	14	0
2	7	0
2	3	1
	1	1

$(1801)_{10} = (11100001001)_{10}$

b) $(1801)_{10}$ to hexadecimal.

16	1801	
16	112	9
16	7	0
	0	7

$(1801)_{10} = (709)_{16}$

c) $(1801)_{10}$ to base 3

```
3 | 1801
3 | 600 — 1
3 | 200 — 0
3 | 66 — 2
3 | 22 — 0
3 | 7 — 2
  | 2 — 1
```

$(1801)_{10} = (2110201)_3$

d) $(1801)_{10}$ to base 5

```
5 | 1801
5 | 360 — 1
5 | 72 — 0
5 | 14 — 2
  | 2 — 4
```

$(1801)_{10} = (24201)_5$

Question No "5"

To Construct Logic gates for f and g

$$f = A + A'B$$

Table :-

A	B	A'	A + A'B
0	0	1	0
0	1	1	1
1	0	0	1
1	1	0	1

Gate :-
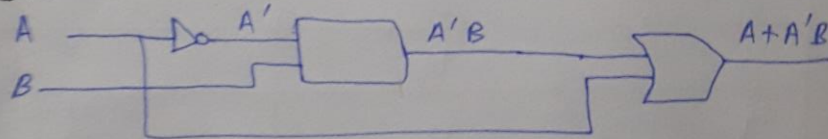
Table :-

$$g = A + B$$

A	B	A+B
0	0	0
0	1	1
1	0	1
1	1	1

Gate :-
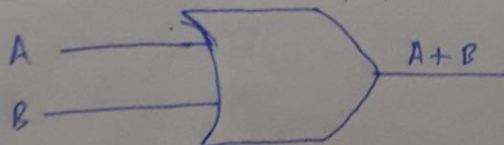
Relation :-

$$A + B = A + A'B$$

$$\boxed{f = g}$$

Question No "6"

Table :-

A = Temp	B = Day	C = Fan
0	0	0
0	1	0
1	0	0
1	1	1

Gates :-

Temp

Day

Fan = Temp · Day
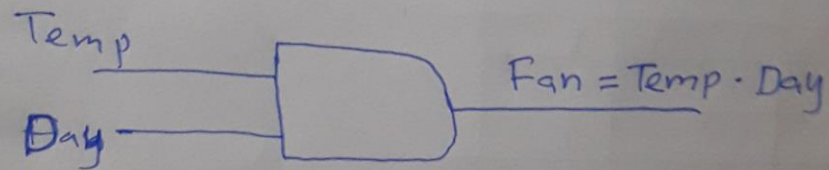
~~Days~~ Temp
Hot = 1
Day = 1

Cold = 0
Night = 0

Fan
ON = 1
OFF = 0