April 2012

Fundamental IT Engineer Examination (Afternoon)

Answers and Marks(in blue)

Q1

Subquestion 1

A	d)	1000 H	2
B	f)	1FFF H	2
C	g)	F800 H	2

Subquestion 2

	d)	OR	2

Subquestion 3

D	b)	$\overline{A15}$, $\overline{A14}$, $\overline{A13}$, A12, $\overline{A11}$	2
E	c)	$\overline{A15}$, $\overline{A14}$, $\overline{A13}$, A12, A11	2

Q2

Subquestion 1

e) 3

```
        op
     op     D
  A     op
        B     C
```

Subquestion 2

b) 3

```
        op1
  A        op2
     op2        op1
  B        C  D        E
```

Subquestion 3

c) $A\,B \times C\,D \times + E +$ 3

Subquestion 4

c) $\text{push}(A) \rightarrow \text{push}(B) \rightarrow \text{add} \rightarrow \text{push}(C) \rightarrow \text{push}(D) \rightarrow \text{mul} \rightarrow \text{add}$ 3

Q3

Subquestion 1

A	a)	`CEIL(Duration/60)`	2
B	a)	`Calls C INNER JOIN Ext_Intl E`	2

Subquestion 2

C	e)	`SUM(CASE WHEN Tariff = 1 THEN 1 ELSE 0 END),` `SUM(CASE WHEN Tariff = 2 THEN 1 ELSE 0 END)`	3
D	g)	`SUM(CASE WHEN Tariff IN (1, 2) THEN 1 ELSE 0 END)`	2
E	h)	`SUM(CASE WHEN Tariff IN (1, 2) THEN Amount ELSE 0 END)`	3

Q4

Subquestion

A	b)	default gateway of Server1	3
B	a)	assign the static IP address, subnet mask, and set default gateway as 172.17.10.100	3
C	c)	192.168.10.0	3
D	a)	PC3	3

Q5

Subquestion 1

A	d)	`FinishHHMM + 2400`	3
B	b)	`60`	1
C	c)	`100`	1
D	b)	`60`	1

Subquestion 2

E	f)	C, F, G, H	3
F	d)	the start time is 22:00 and finish time is 09:30	3

Q6

Subquestion 1

A	g) `s + p`	3
B	c) `p + 1`	3
C	a) `i`	2

Subquestion 2

D	b) 1	3
E	d) 3	3
F	c) $O(n)$	3
G	e) q^2	3

Q7

Subquestion

A	e) `sizeof(data) / sizeof(int) / 2`	3
B	c) `b & 0x3`	3
C	a) `a`	2
D	h) `-2 * a`	2
E	d) `a * 4`	3
F	g) `b & 0x7`	3
G	a) `prod + a`	2
H	b) `prod - a`	2

Q8

Subquestion

A	c) `mazeRows.push(mazeData[index])`	3
B	f) `row`	2
C	h) `store[row]`	2
D	g) `mazeStack.push(new Cell(row, col))`	3
E	c) `currentCell.x`	2
F	d) `currentCell.y`	2
G	b) `pushUnvisited(row - 1, col)`	3
H	d) `pushUnvisited(row, col + 1)`	3