



October 2013

Fundamental IT Engineer Examination (Afternoon)

Answers and Marks(in blue)

Q1

Subquestion

- | | | |
|---|--------|---|
| A | c) 2 | 3 |
| B | e) 13 | 3 |
| C | b) 1 | 3 |
| D | b) 1.4 | 3 |

Q2

Subquestion 1

- c) (FlightID, FlightNumber, FlightDate, DepartureTime, AirplaneType), 3
(FlightNumber, DepartureTime, ArrivalTime),
(FlightNumber, OriginAirport, DestinationAirport)

Subquestion 2

- | | | |
|---|---|---|
| A | f) FlightNumber, MAX(Quantity)-COUNT(*) | 3 |
| B | c) Flight, Reservation, SeatInAirplane | 3 |
| C | d) Flight.FlightID = Reservation.FlightID AND
Reservation.SeatType = SeatInAirplane.SeatType | 3 |

Q3

Subquestion 1

- A e) m5 2
- B d) 192.168.23.128 2
- C c) 255.255.255.224 2

Subquestion 2

- D a) the default gateway is incorrectly configured 2

Subquestion 3

- E a) 103.9.90.193 2
- F c) TCP port 1025 2

Q4

Subquestion 1

- A b) ruk 2
- B c) spk 2
- C d) suk 2
- D d) $md2 \leftarrow MD(m2)$ 2

Subquestion 2

- E d) the message was not sent from Arice 2
- F e) third party changed the message 2

Note: E and F can be exchanged.

Q5

Subquestion 1

- | | | |
|---|---|---|
| A | e) Total purchase amount ≥ 50000 | 3 |
| B | f) Number of sweepstakes tickets > 0
or number of invitation tickets > 0 | 3 |

Subquestion 2

- | | |
|---|---|
| e) Number of sweepstakes tickets
+ Purchased quantity in a record in the work file | 2 |
|---|---|

Subquestion 3

- | | | |
|---|------|---|
| C | c) 3 | 2 |
| D | c) 5 | 2 |

Q6

Subquestion 1

- | | | |
|---|---|---|
| A | b) $E \neq \{\}$ | 4 |
| B | d) $\text{FindTree}(v1) \neq \text{FindTree}(v2)$ | 4 |

Subquestion 2

- | | | |
|---|------------------|---|
| C | d) $e(C, F, 3)$ | 3 |
| D | f) $e(D, G, 3)$ | 3 |
| E | b) A-B-E-F-C-D-G | 3 |
| F | b) 12 | 3 |

Q7

Subquestion 1

- | | | |
|---|---|---|
| A | c) <code>i + rand() % cardsLeft</code> | 3 |
| B | c) <code>skipped == card</code> | 3 |
| C | c) <code>skipped++</code> | 3 |
| D | d) <code>card[i] / (CARDS / SUITS)</code> | 3 |
| E | a) <code>FACES[rank]</code> | 3 |

Subquestion 2

- d) 5H, KD, 4D, 6D, and 3C 5

Q8

Subquestion

- | | | |
|---|---|---|
| A | b) <code>consumer.start();</code>
<code>producer.start();</code> | 4 |
| B | d) <code>InterruptedException</code> | 4 |
| C | f) <code>public synchronized</code> | 4 |
| D | f) <code>wait()</code> | 4 |
| E | c) <code>notify()</code> | 4 |