



Daffodil International University
Department of Computer Science and Engineering
Faculty of Science and Information Technology (FSIT)
Mid Term Examination, Semester: Summer - 2018
Course Code: CSE311 (Day) Course Title: Database Management System
Section: All Course Teacher: All

Time: 90 minutes

Total Marks: 25

Answer all questions

Consider the following scenario to answer Q1:

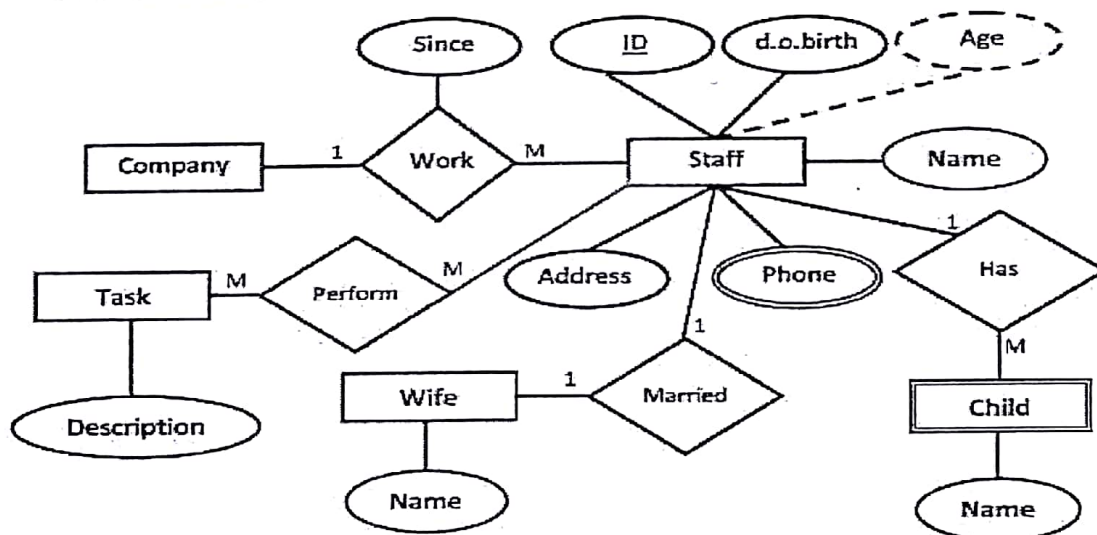
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A University contains many Faculties. The Faculties in turn are divided into several Schools. Each School offers numerous programs and each program contains many courses. Lecturers can teach many different courses and even the same course numerous times. Courses can also be taught by many lecturers. A student is enrolled in only one program but a program can contain many students. Students can be enrolled in many courses at the same time and the courses have many students enrolled.

Q1: Now, propose an Entity Relationship diagram that represents above information. Be sure to mark the key attributes and include cardinality constraints on relationships.

Consider the following ER Diagram to answer Q2:

3



Q2: Convert the ER diagram into a relational database schema. Be certain to indicate primary keys and foreign keys.

Q3: Briefly explain different types of attributes of an entity? Are there any multi-valued and Composite attributes exist in the above ER diagram of question 2? Mention them and justify your answer with few words.

4

Q4: What is Database-Management System? Mention major differences between file-processing system and DBMS.

3

Q5: Consider the following schema to answer

1.5×4+2=8

Consider the following schema for a database where the primary keys are underlined in the tables. Give an expression in SQL for each of the queries given below.

Group (group, type, country, points, noOfvictory)

Teams (name, group, participated)

Match (name, date)

Result (team, match, result)

- Find the countries whose team had the highest points.
- Find the groups of the teams at least one of which was defeated in a match.
- Find the names of the teams with at least one victory.
- Find the match in which team Spain of group A participated.
- Find the names of the teams whose points are the highest among those teams which have equal number of victory.



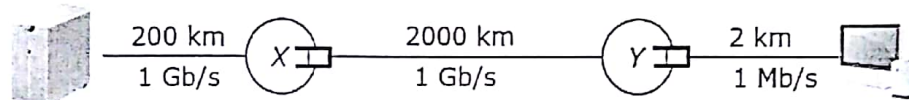
Daffodil International University
Department of Computer Science and Engineering
Faculty of Science and Information Technology
Mid Term Examination, Semester: Summer -2018
Course Code: CSE 313 **Course Title: Computer Networks**
Section: All **Course Teacher: All**

Time: 01:30 Hours

Full Marks: 25

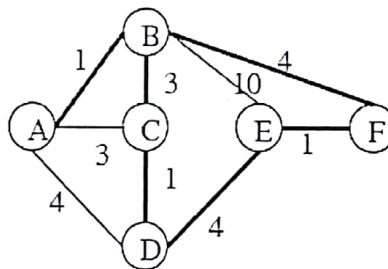
Answer any five questions from the followings

- Q1. a. We know there are two fundamental approaches for moving data through a network of links and switches: **circuit switching** and **packet switching**.
- I. Which switching allows more users to use the network? 0.5+
 - II. In which switching less congestion can happen? 0.5+
 - III. What is the role of output queue in packet switching? 1+
 - IV. When circuit switching is used, what could be the number of users that is supported by the connection? 1
- b. The figure below shows a network path connecting a server to a client. 2



What is the propagation delay for a packet going from the server to the client (you may assume that the speed of light is 200,000 km/s)?

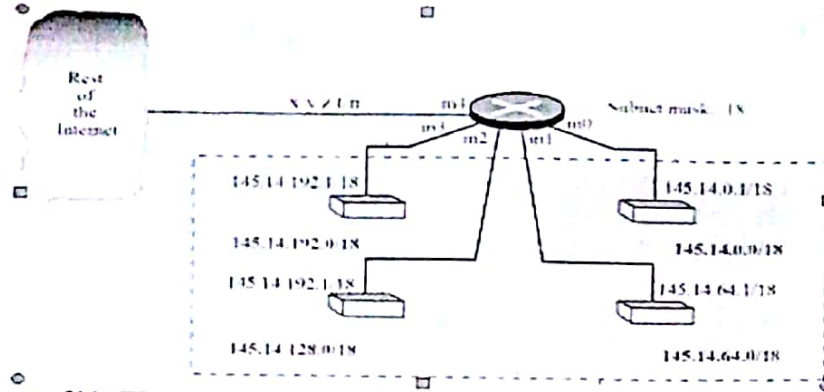
- Q2. a. Distinguish between shared-tree and source-based tree in multi-cast routing. 3
- b. What is the difference between routing and forwarding? 2
- Q3. a. Consider the network shown below. Show the operation of Dijkstra's (Link State) algorithm for computing the least cost path from F (the rightmost node in the figure below) to all destinations. Also explicitly list all the shortest path routes from F to all destinations that are the result of the algorithm's computation. 4



- b. Compare and contrast the IPv4 and the IPv6 header fields. Do they have any fields in common? 1

- Q4. a. In the above figure Router receives a packet with destination address 145.14.32.78. Show how the packet is forwarded.

4



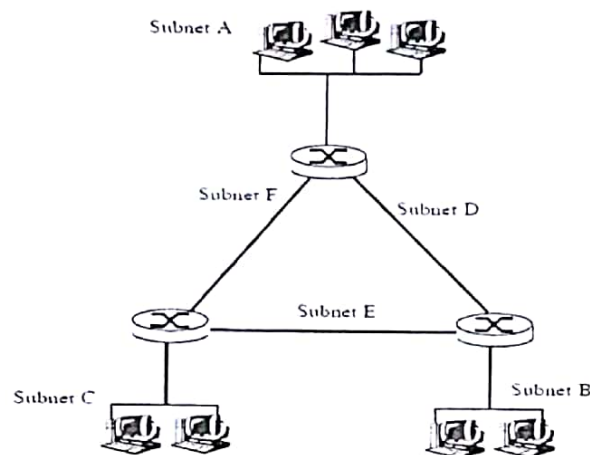
- b. What is the use of NAT?

1

- Q5. a. Consider the following topology. Assign network addresses to each of these 6 subnets, with the following constraints:

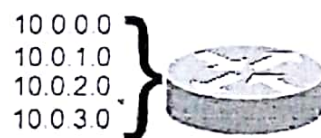
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- All addresses must be allocated from 182.97.0.0
 - Subnet A should have enough addresses to support 250 interfaces
 - Subnet B should have enough addresses to support 120 interfaces
 - Subnet C should have enough addresses to support 120 interfaces
 - Of course, subnets D, E and F should each be able to support 2 interfaces
- Provide three network addresses (of the form a.b.c.d/x) that satisfy these constraints.



- b. What is the most appropriate summarization for these routes?

1



- Q6. a. Let an ISP is assigned an address block, and consider one of the address from that block is 190.69.0.0 /26. Subnet the network so that each subnet has at least 50 hosts. (Host IP loss should be as minimum as possible)

4

- How many subnets?
- First, Last host address of 1000th subnetwork?
- 30th host address of the 60th subnetwork?
- Unnecessary Host address in the subnet
- How many Host address losses for subnetting?

- b. What information can a DHCP server provide to a host?

1



Daffodil International University

Department of Computer Science and Engineering

Faculty of Science and Information Technology

Mid-term Examination Semester: Summer 2018

Course Title – Art of Living

Course Code- GED 321

Section: ALL

Course Facilitators: EUR, SS, MP, MRI, ACC, SB

Exam Duration: 1.5 Hours

Total Marks: 20

Section A - 10 Marks

Read the passage and answer the questions below

Confidence and Self-Esteem were best friends. They went everywhere together. If Confidence bought a new dress, Self-Esteem bought one just like it. They were very close.

One day a new kid came to their school. His name was Pressure. He had a friend called Hateful Words. They decided to give Confidence a hard time.

They constantly teased her. They forced her to do terrible things. It was so terrible that Confidence lost Self-Esteem. When Self-Esteem wanted to start some classes, Confidence said they wouldn't be any good.

Then one day, Pressure introduced Confidence to Doubt. He wanted to ruin Confidence, but Pressure said he couldn't yet. Self Esteem couldn't understand what was wrong with Confidence. Confidence now hung around with Depression, Low Self-Esteem, and Overeating.

These girls were friends of Pressure. Self-Esteem no longer had any friends. She no longer felt good about herself. She went to see her friend, Good Words. Good Words told her how to talk to Confidence. He introduced her to his daughter, Encouragement.

Encouragement and Self-Esteem went to find Confidence. Self Esteem hoped she wasn't too late. The girls found Confidence in a stupor. She was no longer a vibrant, happy young girl. There were dark circles under her eyes. She had gained so much weight from eating that she couldn't move.

Encouragement gasped and Self-Esteem cried. She begged Encouragement to do something.

Encouragement began to hug Confidence. She kissed her and loved her. She told her that she was a beautiful young lady who had a lot going for her.

Encouragement held Confidence so tightly that Self-Esteem thought she would smother her. Confidence began

to cry. As she cried, she seemed to lose weight. Then a bright light suddenly glowed from Confidence and she began to smile.

Pressure and his friends didn't like what Encouragement was doing and tried to attack her. They hit at her and pulled at her, but they couldn't pull her away from Confidence. Then Confidence began to speak.

"Get away from me, Pressure. Take your friends and go. You no longer have any power over me." Confidence was now a glowing light. She and her friends made sure that Pressure and his gang never bothered anyone in their town again.

Courtesy: KiranKumar Roy, Blogspot

1. How many characters are there in the story? What are they? Define every character with appropriate examples with your own words. 5
2. What is the definition of 'Friend'? Is it mandatory to maintain certain etiquettes with our friends? If yes, what kind of etiquette should we maintain? If no, why? Describe the reason with appropriate examples. 5

Section B - 10 Marks

Read the passage and answer any 2 (two) questions

Mr. Arif is a lawyer in Bangladesh High Court. He was a very bright student in his educational life. He is doing great in his law career too. In 2016 he planned to marry. So he contacted Mr. Akhlaq known as Ghotok Pakhi Bhai. Pakhi bhai said to Mr. Arif and his family that there is a girl named Ms. Neela, who is very beautiful, polite and have other qualities which would make her a good housewife. Apart from that Ms. Neela's family has business in Saudi Arabia so they are very rich. Mr. Arif's parents agreed to **take** this girl as their daughter in law and **demand**ed some dowry. Ms. Neela's father also agreed with their demand because it's old Dhaka's tradition to give dowry to the husband of daughter. Unfortunately Neela's father had a business loss after Neela's marriage. He was a heart patient and after this loss his illness increased. So he couldn't give what he promised. Arif's family started to humiliate Neela. Despite being an educated person and a famed lawyer Arif did nothing about it. Sometimes he backed them. Days pass by. Neela became pregnant. In 2017 she gave birth to a male child. But due to some health complications the child died on his 3rd day in this world. Arif's family blamed Neela and her family for this death and told Arif to divorce Neela. Arif did so and sent Neela back to her father's home. He didn't pay a single paisa of Neela's Mohrana (an amount of money that has to be paid to the bride by bridegroom according to Islamic law). Hearing this news Neela's father had a heart attack and he died on 7th November 2017.

3. Thinking out of the box is a buzzing word that attracts everyone. But really coming out of the box is not easy. Discuss your opinion based on the story above. 5
4. Despite of being a topper in education and career Mr. Arif couldn't unlearn some harmful behavior. What is the reason according to your point of view? 5
5. We are obliged to obey our parents. What could Mr. Arif do without giving divorce? What would you do if you were in Mr. Arif's position? 5