PROGRAM: BACHELOR OF TECHNOLOGY
       ENGINEERING: INDUSTRIAL

SUBJECT: INFORMATION SYSTEMS 4

CODE: IIS 411

DATE: SUMMER EXAMINATION 2016
      23 NOVEMBER 2016

DURATION: (SESSION 1) 08:30 - 11:30

WEIGHT: 40 : 60

TOTAL MARKS: 100

ASSESSOR: MR P. DUBE

MODERATOR: MR N. NDOU

NUMBER OF PAGES: 3 PAGES

INSTRUCTIONS TO STUDENTS

PLEASE ANSWER ALL QUESTIONS.
ANSWER THE QUESTIONS IN SEQUENCE

REQUIREMENTS
ONLY ONE POCKET CALCULATOR PER CANDIDATE MAY BE USED.
GRAPH PAPER
Question 1

Woody’s Supermarket, a small chain of grocery stores, is building a website to allow customers to place orders for groceries and other items they sell. The customer places a Web order, the customer master is updated, and an order record created. The order prints at a local store, and the goods are picked from the shelves by the store employees. Customers are sent an email notification that their order is ready. When they pick up the order, frozen goods, chilled products, and other items are assembled. Draw an activity diagram showing the customer using the website to place an order, verification of the order, order confirmation, order details sent to the local store, and a customer email sent to the customer.

(20)

Question 2

“I don’t want to get anyone stirred up, but I think we need to sift through our unfilled order policies,” says Kit Chen. “I wouldn’t want to put a strain on our customers. As you know already, Kit Chen Kaboodle is a Web and mail-order cookware business specializing in ‘klassy kitsch for kitchens,’ as our latest catalog says. I mean, we’ve got everything you need to do gourmet cooking and entertaining: nutmeg grinders, potato whisks, egg separators, turkey basters, placemats with cats on ‘em, ice cube trays in shamrock shapes, and more.

“Here’s how we’ve been handling unfilled orders. We search our unfilled orders file from the Internet as well as mail-order sales once a week. If the order was filled this week, we delete the record, and the rest is gravy. If we haven’t written to the customer in four weeks, we send ‘em this cute card with a chef peeking into the oven, saying, ‘Not ready yet.’ (It’s a notification that their item is still on back order.)

“If the back order date changed to greater than 45 days from now, we send out a notice. If the merchandise is seasonal (as with Halloween treat bags, Christmas cookie cutters, or Valentine’s Day cake molds) and the back order date is 30 days or more, though, we send out a notice with a chef glaring at his egg timer.

“If the back order date changed at all and we haven’t sent out a card in the last two weeks, we send out a card with a chef checking his recipe. If the merchandise is no longer available, we send a notice (complete with chef crying in the corner) and delete the record. We haven’t begun to use email in place of mailed cards, but I’d like to.

“Thanks for listening to all this. I think we’ve got the right ingredients for a good policy; we just need to blend them together and cook up something special.”

Because you are the systems analyst whom Kit hired, go through the narrative of how Kit Chen Kaboodle, Inc., handles unfilled orders, rewriting the recipe for handling unfilled orders in structured English

(10)

Question 3

Western Animal Rescue is a nonprofit organization that supports the fostering and adoption of animals, such as cats, dogs, and birds. People can register to adopt animals. Others register and add animals for adoption. Create the data dictionary structure representing a person registering to adopt an animal. Include name, address (street, city, state or province, zip or mailing code), telephone number, email address, date of birth, current pets (type, breed, age of pet), and references. Each person may have multiple pets and must have at least three references. References must include name, address, telephone number, email address, and how they know the person registering to adopt an animal. Be sure to include notation for repeating elements and optional elements.

(10)
Question 4

Your latest project is to combine two systems used by Producers Financial. Angie Schworer’s loan application system is fairly new, but has no documentation. Scott Wittman’s loan management system is older, needs much revision, and the records are coded and kept independently of the other system. The loan application system accepts applications, processes them, and recommends loans for approval. The loan management system takes loans that have been approved and follows them through their final disposition (paid, sold, or defaulted).

1. Draw a context diagram for the project described above. (6)
2. Draw a level 1 data flow diagram that shows what an idealized combined system would look like. (14)

Question 5

Musixscore.com is an online service providing sheet music to customers. On the “browse music” Web page, customers select a genre of music from a drop-down list. The Web page uses Ajax to obtain a list of performers, musicians, or groups that match the genre, which is formatted as a drop-down list. When a selection is made from the performers drop-down list, the Web page uses Ajax to display a third drop-down list displaying all of the CDs or other works of the performer. When a CD is selected, the Web page uses Ajax to obtain all the songs on the CD in a fourth drop-down list. The viewer may make multiple selections. When the Add to Shopping Cart image is clicked, the songs are added to the shopping cart. The viewer may change any of the drop-down lists to select additional sheet music, and the process is repeated.

Draw a sequence diagram using boundary, control, and entity classes for the Musixscore Web page. (20)

Question 6

State University (ASU) Registration System process is as follows:
1. Professors indicate which courses they will teach on-line.
2. A course catalogue can be printed
3. Allow students to select on-line four courses for upcoming semester.
4. No course may have more than 10 students or less than 3 students.
5. When the registration is completed, the system sends information to the billing system.
6. Professors can obtain course rosters on-line.
7. Students can add or drop classes on-line.

Draw a use case diagram for the State University (ASU) Registration System. (20)