**Roll No.** ☐☐☐☐☐☐☐☐☐☐

# B.C.A.

## SECOND SEMESTER EXAMINATION, 2014-15

## SYSTEM ANALYSIS AND DESIGN

Time : **3 Hours**          Max. Marks : **100**

**Note :** **(i)** Attempt **ALL** questions.
       **(ii)** Choices are given in each question set.

**1.** Attempt any **Four** of the following questions:      **5 x 4 = 20**

    **(a)** What is system analysis? Why is it needed?

    **(b)** What are some important system principles?

    **(c)** What are the main components of a computer based information system and how do they relate to each other?

    **(d)** What do you understand by life cycle model of system development?

    **(e)** What are verification and validation in software development?

    **(f)** How has system distribution affected the way systems are built?

**2.** Attempt any **Four** of the following questions:      **5 x 4 = 20**

    **(a)** What qualities should a system analyst have? How would you acquire these qualities?

    **(b)** What are the disadvantages of hierarchical organization structures?

    **(c)** What are the different kinds of communication found in organization?

    **(d)** What are the important factors for devising a search strategy?

    **(e)** Who are important users that must be interviewed? How would you find them?

    **(f)** What are the differences between closed and open questions?

**3.** Attempt any **Two** of the following questions: **10 x 2 = 20**

(a) Sugar and Hot fast food center wants to install a system to record orders for home delivery of their food item. When regularly customers call Sugar and Hot over telephone, the phone number of the caller is noted down. When this number is entered into the system, the name, address and the last order date for the customer are displayed. Once the order is taken, the total including tax and delivery expenses is calculated, then the order is given to the cook and the receipt is printed. Sometimes special discount offers are printed in the form of coupons. Drivers when make deliveries give customers a copy of the receipt and the discount coupon, if any. He also collects the payment from the customer and deposits the same in the cash section. A periodic total for every month is kept for comparisons with last year performance.

(i) Draw a context level diagram showing all major components.

(ii) Draw a detailed DFD for the process that adds a new customer.

(b) What do you mean by feasibility study? What are the important activities carried out during this phase of software development?

(c) How will you determine if a project is worthwhile? Explain the ways to achieve this.

**4.** Attempt any **Two** of the following questions: **10 x 2 = 20**

(a) Define Normalization. What is functional dependency? When is BCNF required?

(b) What is structured analysis? Briefly review the tools used.

(c) What is ER diagram and how does it help in system development? What is the difference between cardinality and modality?

**5.** Attempt any **Two** of the following questions: **10 x 2 = 20**

(a) Which test cases are written first: white boxes or black boxes? Justify your answer. Explain Unit testing, Integration tests, System testing and Acceptance testing.

(b) Differentiate between error and defect. What do you mean by Total Quality Management? Explain merits and demerits of ISO certification.

(c) Why is it necessary to keep quality assurance checks separate from system developments? Describe some common roles used in inspections.