

This question paper contains 4+2 printed pages]

**BJ—30—2016**

**FACULTY OF COMPUTER STUDIES**

**B.Sc. (CS) (Third Year) (Sixth Semester) EXAMINATION**

**OCTOBER/NOVEMBER, 2016**

**(Revised Course)**

**COMPUTER SCIENCE**

**(Elective)**

**Paper S6.4-(A)**

**(Data Mining)**

*Or*

**Paper S6.4-(B)**

**(Research Methodology)**

*Or*

**Paper S6.4-(C)**

**(Bioinformatics)**

*Or*

**Paper S6.4-(D)**

**(Linux Administration)**

**(Saturday, 26-11-2016)**

**Time : 10.00 a.m. to 1.00 p.m.**

*Time—Three Hours*

*Maximum Marks—80*

**Elective A**

**Paper S6.4-(A)**

**(Data Mining)**

- N.B. :—*
- (i) Attempt *All* questions.
  - (ii) Assume suitable data, if necessary.
  - (iii) Figures to the right indicate full marks.

1. Attempt the following : 20
    - (a) Explain decision support system.
    - (b) Explain Bayes theorem.
    - (c) Explain simplest approach in distance based algorithm.
    - (d) Explain squared error clustering algorithm.
  2.
    - (a) Explain multidimensional schemes and indexing. 8
    - (b) Explain development of data mining. 7
- Or*
- (c) Explain IO<sub>3</sub> in detail. 8
  - (d) Explain scalable OT technique. 7

P.T.O.

3. (a) What is dimensional modeling ? Explain. 8  
 (b) Explain online analytic processing system. 7  
*Or*  
 (c) Explain propagation in neural network used algorithm. 8  
 (d) Explain agglomerative algorithm. 7
4. (a) Explain OLTP system in database. 8  
 (b) Explain PAM algorithm. 7  
*Or*  
 (c) Explain A priori algorithm. 7  
 (d) What is DDA ? Explain task parallelism.
5. Write short notes on (any *three*) : 15  
 (a) Association rules  
 (b) Time series analysis  
 (c) Model based on summarization  
 (d) CART  
 (e) Divisive clustering.

**OR**

**Elective B**

**Paper S6.4-(B)**

**(Research Methodology)**

- N.B. :—* (i) Attempt *All* questions.  
 (ii) Assume suitable data, if necessary.  
 (iii) Figures to the right indicate full marks.

1. Attempt the following : 20  
 (a) Explain the sources of research ideas.  
 (b) What is data analysis ? Explain.  
 (c) Discuss internet research, law and ethics.  
 (d) Define survey. Discuss the advantages of surveys.

2. (a) Discuss the possible products and outcomes of research. 8  
 (b) Explain in brief the data generation methods. 7  
*Or*  
 (c) Explain in detail sampling techniques. 8  
 (d) What is meant by an experimental research strategy ? 7
3. (a) Explain the concept of external validity in experimental research. 8  
 (b) What is case study ? Explain the types of case study. 7  
*Or*  
 (c) Discuss the issues related with internet based case studies. 8  
 (d) Discuss the examples of experiments in IS and computing research. 7
4. (a) Discuss how case study research might be applied to the internet. 8  
 (b) What are the issues to be address in planning and designing survey research ? 7  
*Or*  
 (c) Explain how internet can be used during a literature review. 8  
 (d) Explain the concept of generalizations in case study. 7
5. Write short notes on (any *three*) : 15  
 (a) Selecting a research topic  
 (b) Plagiarism  
 (c) Sampling frame  
 (d) Observation and measurement  
 (e) Selection of cases.

**OR**

**Elective C**  
**Paper S6.4-(C)**  
**(Bioinformatics)**

- N.B. :—* (i) Attempt *All* questions.  
 (ii) Assume suitable data, if necessary.  
 (iii) Figures to the right indicate full marks.

P.T.O.

1. Attempt the following : 20
  - (a) Discuss the levels of biological activity in a cell.
  - (b) What is gene ? Discuss functional definition of gene.
  - (c) What is the difference between global and local alignment method ?
  - (d) Explain the types of drugs.
2.
  - (a) What are the various types of protein databases. 8
  - (b) Explain data retrieval tools in brief. 7

*Or*

  - (c) Discuss nucleotide and genome sequences. 8
  - (d) Explain data mining of biological databases. 7
3.
  - (a) Explain the structure of eukaryotic gene. 8
  - (b) Explain BLAST algorithm. 7

*Or*

  - (c) Explain dynamic programming method. 8
  - (d) Explain BLAST services available from NCBI. 7
4.
  - (a) Explain in brief process of drug discovery. 8
  - (b) Explain applications of genetic maps. 7

*Or*

  - (c) Compare FASTA and BLAST algorithms. 8
  - (d) Explain the use of scoring matrices. 7
5. Write short notes on (any *three*) : 15
  - (a) Human genome project
  - (b) Sequence submission
  - (c) Internal organization of structural genes
  - (d) Local alignment
  - (e) End-free space alignment.

**OR****Paper S6.4-(D)  
(Linux Administration)**

- N.B. :—* (i) All questions are compulsory.  
(ii) Figures to the right indicate full marks.  
(iii) Assume suitable data, if necessary.

1. Attempt the following : 20
  - (a) Explain the advantages of linux.
  - (b) Explain linux distribution
  - (c) Explain changing user information.
  - (d) Explain virtual consoles.
2.
  - (a) Explain working with file system. 8
  - (b) Explain system monitoring tools. 7

*Or*

  - (c) Explain local printer installation. 8
  - (d) Explain RPM for software management. 7
3.
  - (a) Explain X-window system. 8
  - (b) Explain starting and stopping services manually. 7

*Or*

  - (c) Explain network printer installation. 8
  - (d) Explain RPM on the command line with example. 7
4.
  - (a) Explain Red-Hat Linux Installation. 8
  - (b) Explain graphical package management. 7

*Or*

  - (c) Explain configuring services at boot with administrative tools. 8
  - (d) Explain shells in detail. 7

P.T.O.

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5. Write short notes on (any *three*) :

15

- (a) Text editors
- (b) Console print control
- (c) CUPS
- (d) Starting X
- (e) Linux loaders.

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