

[Total No. of Printed Pages 2]

CODE NO:- D-4025
FACULTY OF SCIENCE

B.Sc(Sem-III) Second Year Examination - October-2015
Computer Science
Database Management System CS305-T(Revised)

[Time: 1:30 Hours]

[Max. Marks:50]

"Please check whether you have got the right question paper."

V.B

- i) Attempt all questions.
- ii) Illustrate your answer with labeled diagram.

Q.1 What is normalization? Explain 1NF, 2NF, and 3NF forms with suitable example.

20

OR

Write and explain advantages and disadvantages of DBMS.

Q.2 What is relational algebra? Explain any 4 operation of relational algebra.

20

OR

Write short note on (any 4)

- a) DBMS users
- b) Relational model.
- c) Function of DBA.
- d) Functional dependency.
- e) Mapping cardinality
- f) Network data model

Q.3 Multiple choice questions.

10

1) An attribute is also referred to as -----.

- a) Entity
- b) Record
- c) Data item
- d) None

2) Architecture of database can be viewed as ----- levels

- a) 1
- b) 2
- c) 3
- d) 4

3) In relational model, relations are referred to as-----.

- a) Tables
- b) Rows
- c) Tuples
- d) Attributes

4) In E-R diagram an entity set is represented by-----.

- a) Rectangle
- b) Ellipse
- c) Diamond
- d) Circle

5) ----- is the logical design of the database.

- a) Database schema
- b) Database instance
- c) Relative schema
- d) None

6) An entity set that has a primary key is -----entity set.

- a) Weak
- b) Strong
- c) Both a & b
- d) None

7) Integrity rule -----is concerned with primary key.

- a) 1
- b) 2
- c) 3
- d) 4

8) -----is vertical subset of the relation.

- a) Selection
- b) Rejection
- c) Join
- d) None

9) Selection operation is given by symbol.

- a) π
- b) $|x|$
- c) σ
- d) None

10) -----model is based high level, based on perception of real world.

- a) Relational
- b) E-R
- c) Network
- d) Hierarchical

Total No. of Printed Pages:2

SUBJECT CODE NO:- L_4036

FACULTY OF SCIENCE

B.Sc (Computer Science) S.Y.(Sem- III) Examination Nov/Dec 2017
Database Management System CS 305-T
(Revised)

[Max.Marks:50]

[Time: 1:30 Hours]

Please check whether you have got the right question paper.

N.B

- 1) Attempt all questions.
- 2) Make suitable assumptions wherever necessary.

Q.1 Choose the most suitable option.

10

- 1) Relational algebra is a ----- query language that takes two relation as input & produce another relation as output of query.
 - a) Relational
 - b) Structural
 - c) Procedural
 - d) fundamental
- 2) ----- is a join condition contains an equality operator.
 - a) Equijoins
 - b) Cartesian
 - c) Natural
 - d) Left
- 3) The descriptive property possessed by each entity set is -----
 - a) Entity
 - b) Attribute
 - c) Relation
 - d) Model
- 4) The function that an entity plays in a relationship is called that entity's -----
 - a) Participation
 - b) Position
 - c) Role
 - d) Instance
- 5) --- display the unique values of column.
 - a) Form
 - b) Distinct
 - c) Name
 - d) All of the above
- 6) The join operation in relational algebra for projecting a set of tuple from a relation
 - a) True
 - b) False

2017

- 7) A ----- in a table represents a relationship among a set of values
- Column
 - Key
 - Row
 - Entry
- 8) The tuples of the relations can be of ---- order.
- Any
 - Same
 - Sorted
 - Constant
- 9) The number of attributes in relation is called as degree.
- True
 - False
- 10) Key is the property of entire relation, rather than of the individual tuples in which each tuple is unique.
- True
 - False

Q.2 a) Define data, give the different types of data with example. 05
 b) What is database system? Give different application of database system. 05

OR

c) Explain the three level architecture of DBMS with neat label diagram. 10

Q.3 a) Define entity, explain entity relationship design issues. 05
 b) Explain detail duty of Data base Administrator. 05

OR

c) Explain the following terms with reference to E-R model. 10

- 1) Cardinality & participation
- 2) Relationship type

Q.4 a) What is functional dependency? How it is eliminated in data. 05
 b) Explain Cartesian product operation in relational algebra. 05

OR

c) Define Normalization. List & explain various forms of normalization with proper example. 10

Q.5 Write short note on (any 2) 10

- Different types of outer join
- Hierarchical data model
- Component of DBMS
- Advantages of SQL

Total No. of Printed Pages: 2

SUBJECT CODE NO:- D-4054
FACULTY OF COMPUTER SCIENCE
B.Sc. (C.S.) S.Y. (Sem-III) Examination Oct/Nov 2016
Database Management System CS-305-T
(Revised)

[Max. Marks: 50]

[Time: 1:30 Hours]

"Please check whether you have got the right question paper."

- N.B
i) Attempt all questions.
ii) illustrate your answer with labelled diagram.

| | | |
|-----|--|----|
| Q.1 | What a data model? Explain relational model in detail. OR Explain advantages and disadvantages of DBMS over conventional file system. | 20 |
| Q.2 | What is relational algebra? Explain any three operations of relational algebra. OR Write short note on (any 4) a) DBMS facilities b) Data association c) 2NF d) Functions of DBA e) Object-oriented model f) Integrity rule. | 20 |
| Q.3 | Multiple choice questions. 1) Database schema is written in --- a) HN b) DML c) DDL d) DCL 2) In E-R diagram attributes are represented by --- a) Rectangle b) square c) ellipse d) triangle 3) The language used in application program to request data from the DBMS is referred to as - a) DML b) DDL c) VDL d) SQL 4) --- is an association among several entities. a) Key b) relationship c) attribute d) none 5) --- model is high level based on a perception of real world. a) Relational b) E-R model c) both a & b d) none 6) An entity set have not sufficient attribute to form a primary key is --- entry set a) Strong b) weak c) both a & b d) none | 10 |

2016

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- 7) ----- is a type of constraint that is generalized notion of the key.
a) Normalization b) functional dependency c) both a & b d) none
- 8) The first operation in DML is called -----.
a) Data dictionary b) directory c) query d) all of above
- 9) Integrity rule --- is concerned with foreign key.
a) 1 b) 2 c) 3 d) 4
- 10) ----- is vertical subject of the relation.
a) Selection b) join c) projection d) none

[Total No. of printed pages: 4]

CODE NO:- P-4020

FACULTY OF SCIENCE

B.Sc. Second Year (Sem-III) Examination

Oct - 2014

Computer Science _ Statistical Methods

Paper No- CS306CT

[Time: Two Hours]

[Max. Marks: 50]

N.B

"Please check whether you have got the right question paper."

- 1) All questions are compulsory.
- 2) All questions carry equal marks.
- 3) Use blue or black pen

Q. 1 a) Define statistics. Given scope and importance of statistics.

10

OR

Explain method of constructing Histogram, frequency polygon.

Q. 2. b) Define Geometric mean. State merits, demerits and applications of Geometric mean.

10

OR

a) What are properties of good average?

b) Draw histogram and frequency polygon for following data

| | | | | | | |
|----------------|-------|-------|-------|-------|-------|-------|
| Monthly wages | 10-13 | 13-15 | 15-17 | 17-19 | 19-21 | 21-23 |
| No. of workers | 06 | 53 | 85 | 56 | 21 | 16 |

Q. 3. a) Calculate median & mode for following data

10

| | | | | | | | | |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|
| Class | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 |
| Frequency | 05 | 09 | 13 | 21 | 20 | 15 | 08 | 03 |

OR

a) Draw of gives for the following data

| | | | | | | | |
|----------------|------|-------|-------|-------|-------|-------|-------|
| Marks | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 |
| No. of Student | 4 | 8 | 11 | 15 | 12 | 6 | 3 |

b) State the method to construct a pie-diagram

10

Solve any two from following.

a) Distinguish between absolute & relative measures of dispersion.

b) Define variance. State different formulae to calculate variance.

c) Calculate coefficient of variation for following distribution giving 3 telephone calls according to their duration in seconds.

| | | | | | | | |
|--------------|------|-------|-------|--------|---------|---------|---------|
| Duration | 0-30 | 30-60 | 60-90 | 90-120 | 120-150 | 150-180 | 180-210 |
| No. of calls | 9 | 17 | 43 | 82 | 81 | 44 | 24 |

d) Calculate mean deviation from mean for following series

| | | | | | |
|----------------|------|-------|-------|-------|-------|
| Marks | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 |
| No. of Student | 5 | 8 | 15 | 16 | 06 |

Q. 5. a) Fill in the blanks

05

1) Median is the average suited for Classes

2) Mean deviation is less affected by than standard deviation.

3) Dispersion is measure of of the items

4) are ignored while calculating mean deviation.

5) Mean - Mode = Median.

b) State true or false

05

1) Cumulative frequencies are not decreasing.

2) Range is based on each & every item of distribution.

3) Median is the value of variance which divides the total frequency into two equal parts.

4) Mode = Mean - Median.

5) Standard deviation of every distribution is unique and always exists.

[Total No. of Printed Pages : 2]

CODE NO:- D-4030

FACULTY OF SCIENCE

B.Sc (Sem-III) Second Year Examination - OCT - 2015

Computer Science

Statistical Methods - CS-300-1 (Revised)

[Max. Marks: 50]

[Time: 1:30 Hours]

"Please check whether you have got the right question paper."

N.B.

- Attempt all questions.
- Use of non-programmable calculator is allowed

Q.1 Convert the following data in frequency distribution table with grouped data as 20-25, 25-30, 30-35 and on the data: 20
45, 54, 49, 27, 43, 54, 49, 27, 38, 41,
38, 52, 28, 36, 41, 34, 46, 29, 52, 53,
54, 27, 28, 54, 43, 38, 42, 30, 33, 37,
39, 35, 40, 44, 42, 45, 25, 27, 30, 32.

Find the arithmetic mean and mode of the above data

OR

Define the distribution and describe in brief about any three measures of dispersion

Compute the quartile deviation for the following distribution of data:-

| Mon. temp in °C | 10-15 | 15-20 | 20-25 | 25-30 | 30-35 | 35-40 | 40-45 |
|-----------------|-------|-------|-------|-------|-------|-------|-------|
| No. of weeks | 3 | 8 | 11 | 12 | 10 | 5 | 3 |

Q.2 Find the modal number of packages received by the office per day. Below is data of package received: 20

| No. of Package | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 |
|----------------|-------|-------|-------|-------|-------|-------|
| No. of days | 2 | 8 | 16 | 24 | 30 | 20 |

Also draw the frequency polygon of the above data too.

OR

Write a short notes on (any four):

- Frequency curve
- Median of grouped data
- Importance of statistics
- Standard deviation
- Demerits of modes
- Primary and secondary data

Q.3 Multiple choice questions:-

i) Measures of dispersion is

- Mean
- standard deviation
- median
- correlation

ii) _____ is a graphical record of a set of rectangles

- Die diagram
- frequency polygon
- histogram
- cumulative frequency

iii) The arithmetic mean of a set of 10 numbers is 20. If each number is first multiplied by 2 and then increased by 5, then what is the mean of new number?

- 20
- 25
- 40
- 45

iv) The standard deviation of population is denoted by

- Ω
- σ
- Σ
- ω

v) A value of the variable which occurs most often is called

- Mean
- median
- mode
- range

vi) The arithmetic mean is 25 and all the sum of observation is 350 then the number of observation are

- 25
- 70
- 14
- 8750

vii) What is the median of the following set of scores: → 18, 6, 12, 10, 14 ?

- 10
- 14
- 18
- 12

viii) _____ are used when you want to visually examine the relationship between two quantitative variables.

- Bar graph
- pie graphs
- line graph
- scatter diagram

ix) The proportion of data indicated by the number of degrees in each section of 360 is

- Graph
- pie diagram
- frequency curve
- histogram

x) The arithmetic mean of the first ten whole number is

- 5.5
- 5
- 4
- 4.5

Printed Pages—3]

CODE NO. : D—4044—2013

FACULTY OF SCIENCE

B.Sc. (Comp. Sci.) (Third Semester) EXAMINATION

MARCH/APRIL, 2013

COMPUTER SCIENCE

Paper 306CT

(Statistical Method)

Time—1½ Hours

Maximum Marks—30

"Please check whether you have got the right question paper."

N.B. :— (i) Attempt All questions.

(ii) All questions carry equal marks.

(iii) Use only blue or black pen.

1. Attempt any one : 10

(a) What are the advantages of presentation of data through a graph ? Describe the rules regarding construction of graphs.

(b) State various types of data used in statistics.

26/3

P.T.O.

(2)

10

2. Attempt any one :

(a) Calculate the simple geometric mean from the following

items :

$$\sqrt[n]{x_1 \cdot x_2 \cdot \dots \cdot x_n} = \sqrt[n]{\sum f_i x_i}$$

133, 141, 125, 173, 182

(b) Calculate the Harmonic Mean of the following series :

x_nth item

| <i>x_nth Value</i> | <i>Frequency</i> |
|------------------------------|------------------|
|------------------------------|------------------|

| | |
|---|---|
| 2 | 4 |
|---|---|

| | |
|---|----|
| 6 | 12 |
|---|----|

| | |
|----|----|
| 10 | 20 |
|----|----|

| | |
|----|---|
| 14 | 9 |
|----|---|

| | |
|----|---|
| 18 | 5 |
|----|---|

3. Attempt any one :

10

(a) What do you understand by dispersion ? Explain briefly, the various methods used for measuring dispersion.

(b) Calculate coefficient of range from the following data :

| Marks | No. of Students |
|-------|-----------------|
| 10—20 | 8 |
| 20—30 | 10 |
| 30—40 | 12 |
| 40—50 | 8 |
| 50—60 | 4 |

Total No. of Printed Pages: 3

SUBJECT CODE NO.: - L-4030
FACULTY OF SCIENCE

B.Sc (Computer Science) S.Y.(Sem- III) Examination Nov/Dec 2017
Statistical Method - CS 306-T (Revised)

[Time: 1:30 Hours]

[Max. Marks: 50]

Please check whether you have got the right question paper.

i) All questions are compulsory.

N.B

Q.1 A) Fill in the blanks. 10

- 1) The difference between upper and lower limit of class is known as
 - a) Frequency
 - b) Class interval
 - c) Count
 - d) Limit
- 2) The modal value is that value in a series of observations which occurs with frequency...
 - a) Maximum
 - b) Minimum
 - c) Moderate
 - d) Simple
- 3) Median is not affected by values.
 - a) Small
 - b) Large
 - c) Medium
 - d) Extreme
- 4) Range cannot be computed in distribution.
 - a) Open-end
 - b) Closed end
 - c) Frequency
 - d) All of these
- 5) Standard deviation is denoted by symbol.
 - a) \bar{x}
 - b) σ
 - c) Δ
 - d) s

2017

- 6) Coefficient of variance is measure of dispersion.
- Absolute
 - Related
 - Relative
 - Co-related
- 7) Pie-chart is an example of dimensional diagram.
- One
 - Two
 - Three
 - Multiple
- 8) is measure of the variation of items.
- Mean
 - ~~Dispersion~~
 - Median
 - Mode
- 9) average can be calculated graphically
- Mean
 - ~~Median~~
 - Mode
 - Geometric mean.
- 10) Bar diagrams are dimensional diagram.
- One
 - Two
 - Three
 - Multiple.

- Q.2
- State the method to construct pie-diagram.
 - Explain how ogives are drawn for any distribution.
- OR
- 9) Explain method of constructing histogram and frequency polygon.
- Q.3
- Define median. State its merits.
 - Explain classification of data.
- OR
- c) Find missing frequency in the following distribution if N is 100 and median is 30.

| Marks | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |
|-----------------|------|-------|-------|-------|-------|-------|
| No. of students | 10 | ? | 25 | 30 | ? | 0 |

Q.4

- a) Distinguish between qualitative and quantitative data.
 b) Calculate mean deviation from following series.

05
05

| | | | | | |
|---|----|----|----|----|----|
| x | 10 | 11 | 12 | 13 | 14 |
| f | 03 | 12 | 18 | 12 | 03 |

OR

- c) The following are prices of shares of ABC co. Ltd. from Mon to sat. Calculate range and its coefficient.

| Day | Mon | Tue | Wed | Thus | Fri | Sat |
|-------|-----|-----|-----|------|-----|-----|
| Price | 200 | 210 | 208 | 160 | 220 | 250 |

Q.5

10

Write short notes on (any two)

- a) Geometric Mean
- b) Primary and secondary data
- c) Variance
- d) Quartile deviation.

12

2017

Printed Pages—3]

B.Sc. (Comp. Sci.) (III Sem.)

CCC—120—2011

FACULTY OF SCIENCE

B.Sc. (Comp. Sci.) (Third Semester) EXAMINATION

OCTOBER/NOVEMBER, 2011

STATISTICAL METHOD

Paper 306CT

(Monday, 17-10-2011)

Time—1½ Hours

Maximum Marks—30

"Please check whether you have got the right question paper."

N.B. :— (i) Attempt All questions.

(ii) All questions carry equal marks.

(iii) Use only blue or black pen.

1. Attempt any one :

(a) Explain the various methods that are used for Graphical representation of frequency distribution. 10

(b) Define primary data and secondary data. State the advantages of secondary data. 10

P.T.O.

(- 2 -)

2. Attempt any one :

(a) Find the Median of the following distribution : 10

| Variate Value | Frequency |
|---------------|-----------|
|---------------|-----------|

| | |
|---|---|
| 5 | 3 |
|---|---|

| | |
|---|---|
| 7 | 2 |
|---|---|

| | |
|---|---|
| 8 | 3 |
|---|---|

| | |
|---|---|
| 9 | 1 |
|---|---|

| | |
|----|---|
| 12 | 4 |
|----|---|

| | |
|----|---|
| 17 | 1 |
|----|---|

| | |
|----|---|
| 18 | 2 |
|----|---|

| | |
|----|---|
| 19 | 1 |
|----|---|

| | |
|----|---|
| 20 | 1 |
|----|---|

(b) Discuss merits and demerits of mode. 10

3. Attempt any one :

(a) Calculate the standard deviation from the following data : 10

| Size of Item | Frequency |
|--------------|-----------|
|--------------|-----------|

| | |
|---|---|
| 6 | 3 |
|---|---|

| | |
|---|---|
| 7 | 6 |
|---|---|

| | |
|---|---|
| 8 | 9 |
|---|---|

| | |
|----|----|
| 9 | 13 |
| 10 | 8 |
| 11 | 5 |
| 12 | 4 |

(b) From the following distribution, calculate the value of the Median, Mode and Quartile Deviation :

| X | f |
|-----------|----|
| 300—399 | 14 |
| 400—499 | 46 |
| 500—599 | 58 |
| 600—699 | 76 |
| 700—799 | 68 |
| 800—899 | 62 |
| 900—999 | 48 |
| 1000—1099 | 22 |
| 1100—1199 | 6 |

[Time: 1:30 Hours]

[Max. Marks: 50]

"Please check whether you have got the right question paper."

N.B

- Attempt all questions.
- Use Non-Programmable calculator is allowed.

Q.1(A) What types of data can be displayed using a bar chart? Describe the stacked and grouped bar chart [20] with the help of suitable example.

Also find the mean daily sales of salesman, assuming an obituary point, A=1500 & the distribution of daily sales as:

| Daily Sales | 0-600 | 600-1200 | 1200-1800 | 1800-2400 | 2400-3000 | 3000-3600 |
|----------------|-------|----------|-----------|-----------|-----------|-----------|
| NO of salesman | 9 | 11 | 25 | 20 | 30 | 5 |

(Note:- use step deviation method only)

OR

(A) Explain brief about the different measures of dispersion Obtain the mean derivation from the mean for [20] the following data:

| X | 4.5 | 6.7 | 8.9 | 10.11 | 12.13 | 14.15 |
|---|-----|-----|-----|-------|-------|-------|
| Y | 4 | 10 | 20 | 15 | 8 | 3 |

Q.2(A) What is harmonic mean? Compute the harmonic mean of given frequency distribution data: [20]

| | | | | |
|--------------|-----|------|-----|----|
| Data(x) | 60 | 25 | 350 | 25 |
| Frequency(f) | 900 | 3000 | 400 | 15 |

Also write the advantages & disadvantages of the harmonic mean.

OR

W-2016

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[20]

(A) Write short notes on (Any four)

- i) Histogram
- ii) Qualitative and Quantitative Data
- iii) Mean deviation
- iv) Scope of the statistics
- v) Frequency curve
- vi) Pie-Chart

Q.3 Multiple choice questions:

[1×10=10]

- i) The sum of values of data is divided by total number of values is used to calculate:-
 - (a) Arithmetic mean
 - (b) Weight average mean
 - (c) Geometric mean
 - (d) Harmonic mean
- ii) The histograms , pie charts are all types of-----
 - (a) 1-D diagrams
 - (b) 2-D diagrams
 - (c) Cumulative diagrams
 - (d) Dispersion diagrams
- iii) The letter used to denote variance of population is---
 - (a) $2\sigma^2$
 - (b) $2\Sigma^2$
 - (c) $2 \Sigma xy$
 - (d) 6^2
- iv) The number of observations are 11 and the value of arithmetic mean is 19 then sum of all values is---
 - (a) 209
 - (b) 8.
 - (c) 30
 - (d) 173
- v) Which of the following is NOT a common measure of central tendency?
 - (a) Mode
 - (b) Range
 - (c) Median
 - (d) Mean.
- vi) The median is ---
 - (a) The middle point
 - (b) The highest number
 - (c) The average
 - (d) The lowest number

W-2016

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- vii) Which one of the following variable is not categorical?
(a) Age of a person
(b) Gender of a person
(c) Choice of test item
(d) Material status of a person.
- viii) The score that occurs most frequently in a distribution is-----
(a) Mean
(b) Median
(c) Mode
(d) Average
- ix) If Q1 and Q3 of a distribution are 37 and 75 respectively. The quartile deviation is-----
(a) 38
(b) 17.5
(c) 19
(d) 112
- x) Pie diagram is a ----- diagram.
(a) Circular
(b) Rectangular
(c) Triangular
(d) None of the above