



Q-2 Do as directed. (ATTEMPT ANY TEN)

- (1) What is Translator? List all translators.
- (2) What is an Editor? Give three examples of Well Know Editors.
- (3) Draw a flowchart to find simple interest. [ Hint:  $SI = (P * R * N)/100$  ]
- (4) Explain ternary operator with example.
- (5) Write Rules of variable name.
- (6) Explain printf() statement with example.
- (7) What is an array? Write syntax to declare 1D array in c. also give one example.
- (8) Write difference between break and continue.
- (9) Explain the abs ( ) function.
- (10) What is user – define function? Give one example of user define function.
- (11) What is string? List out the operation perform on the string.
- (12) Define function? List out the category of function.

- Q-3 A What is flow chart? Explain symbols used to draw a flow chart. 5  
 B Explain High Level Language with advantages and disadvantages. 5

OR

- Q-3 A What is an algorithm? Write advantages and disadvantages of an algorithm. 5  
 B Explain Assembly Language with advantages and disadvantages. 5  
 Q-4 A Explain Basic Structure of C program. 5  
 B What is the output for following? 5  
 [a].  $4/3\%9-3$  [b].  $(7/3)+4\%3/7$  [c].  $10/5-2*(3\%6)$  [d].  $(3/2)*6/2-1$  [e].  $7/2+(4*3)\%2$

OR

- Q-4 A What is Variable? How to declare and initialization of variable with example. 5  
 B Explain basic data types used in C language. 5  
 Q-5 Explain while, do-while & for looping statements with syntax and example. 10

OR

- Q-5 Explain the following library function with syntax and example 10  
 [a]. sqrt ( ) [b]. isdigit ( ) [c]. pow ( ) [d]. islower ( )  
 Q-6 A Explain the following category of function with example 5  
 [a]. No argument & No return value [b]. With argument & With return value  
 B Explain following string function with syntax and example 5  
 [a]. strlen() [b]. strrev()

OR

- Q-6 A Explain the following category of function with example 5  
 [a]. No argument & With return value [b]. With argument & No return value  
 B Explain following string function with syntax and example 5  
 [a]. strcpy() [b]. strcat()

Best of luck

②

[34/A16]

SC

No. of Pages: 2

**SARDAR PATEL UNIVERSITY**  
**BCA EXAMINATION, 1<sup>st</sup> SEMESTER**

10<sup>th</sup> November Friday, 2017

10:00a.m. to 1:00 p.m.

US01CBCA02

[Computer Organization]

Maximum Marks: 70

Q-1 Multiple Choice Question.[Each Question carries one Mark] [10]

- 1) Artificial Intelligence is associated with which generation?
  - A. First Generation
  - B. Second Generation
  - C. Fifth Generation
  - D. Sixth Generation
- 2) Numbers are stored and transmitted inside a computer in
  - A. binary form
  - B. ASCII code form
  - C. decimal form
  - D. alphanumeric form
- 3)  $11001_2 - 10001_2 =$  \_\_\_\_\_
  - A. 10000
  - B. 01000
  - C. 00100
  - D. 00001
- 4) ASCII equivalent of a 9 is \_\_\_\_\_
  - A. 56
  - B. 57
  - C. 58
  - D. 59
- 5) The maximum number stored in 8 bits using 1's complement is \_\_\_\_
  - A. 127
  - B. 128
  - C. 129
  - D. -127
- 6) The representation of 10 using Excess notation is \_\_\_\_\_
  - A. 11101101
  - B. 11001101
  - C. 10001010
  - D. 10110011
- 7) Multiprocessor is referred as
  - A. SISD
  - B. SIMD
  - C. MISD
  - D. MIMD
- 8) The Full form of EEPROM
  - A. Electrically erasable PROM
  - B. Expert erasable ROM
  - C. Electronic effective PROM
  - D. none of them
- 9) Dot matrix printer is an example of
  - A. Serial printer
  - B. laser printer
  - C. drum printer
  - D. none of these
- 10) Monitor is made up of \_\_\_\_\_.
  - A. CRT
  - B. CPU
  - C. keyboard
  - D. none of these

1

[PTO]

- Q-2 Give Answers for the following:(Any ten) [20]
- 1 Explain fifth generation of computer.
  - 2 Explain hexadecimal number system.
  - 3 List applications of computer.
  - 4 Explain odd and even parity.
  - 5 List steps of Instruction Execution cycle.
  - 6 Explain 2's complement method with example.
  - 7 Explain multiprocessor in short.
  - 8 What do you mean by Latency?
  - 9 Explain RAM.
  - 10 Define direct addressing.
  - 11 Define line printer.
  - 12 Differentiate: input device and output device.

- Q-3 A) Explain Binary and octal Number system in detail. [5]  
B) Explain binary number system and convert  $(1011010101)_2$  (binary number) into octal, hexadecimal and decimal number system. [5]

OR

- Q-3 A) Draw the Block diagram of Computer and explain its functions. [5]  
B) Explain Hexadecimal number system and convert  $(DEF)_{16}$  (Hexadecimal number) into binary, octal and decimal number system. [5]

- Q-4 A) Explain Hamming code method with example. [5]  
B) Write a note on Von Neumann machine. [5]

OR

- Q-4 A) Explain UNICODE. [5]  
B) Write a note on error detection and correction code with example. [5]

- Q-5 A) Explain the role of Registers in computer storage. [5]  
B) Explain pipelining in detail. [5]

OR

- Q-5 A) Explain Processor with block diagram and memory architecture of a computer system. [5]  
B) Write a note on Hard Disk with diagram. [5]

- Q-6 List all Addressing techniques and explain any three in detail with examples. [10]

OR

- Q-6 Explain keyboard and laser printer in detail. [10]

- x -

(2)

[29/A16]

SEAT No. \_\_\_\_\_

No. of Printed Pages : 2

**SARDAR PATEL UNIVERSITY**  
**F.Y.BCA (First Semester)(CBCS) EXAMINATION 2017**  
**Saturday, 11<sup>st</sup> November**  
**10.00 a.m. to 1.00 p.m.**  
**US01CBCA03 : PC Software**

**Maximum Marks : 70**

**Note: - Answers of all the questions (including multiple choice questions) should be written in the provided answer book only.**

**Q.1 Multiple choice questions: [10]**

1. Which is the shortcut key to open Format menu in MS WORD?  
 a) Alt + O    b) Ctrl + I    c) Alt + t    d) None.
2. Which of the following is example of Programming Language?  
 a) Spreadsheet    b) DBMS    c) Java    d) None.
3. To insert a field from the data source in the main document, use the \_\_\_\_\_ button on the Mail Merge Toolbar.  
 a) View Merge Data    b) Insert Merge Field  
 c) Merge to Printer    d) Match Field
4. The spell-check feature can be initiated by pressing the function key \_\_\_\_\_.  
 a) F1    b) F5    c) F9    d) F7
5. Page margins can be changed in \_\_\_\_\_ option of File Menu.  
 a) Page Setup    b) Format Paragraph    c) Format Font    d) None.
6. Formula =Round (12345.12345, 2) will result in \_\_\_\_\_.  
 a) 12345.123    b) 12000.12    c) 13000    d) None.
7. \_\_\_\_\_ Short cut key will open Format Cell dialog box.  
 a) Ctrl + 1    b) Ctrl + 0    c) Alt + 1    d) None.
8. A formula always begins with \_\_\_\_\_.  
 a) +    b) =    c) -    d) None.
9. You can open the Sort dialog box by choosing Sort from the ..... menu  
 a) View    b) Format    c) Tool    d) Data.
10. Which Menu has option Auto Filter and Advance Filter?  
 a) Data    b) Tools    c) Format    d) None.

①  
[P.T.O]

**Q.2 Attempt any Ten out of Twelve. [20]**

1. What is **Personal Computer**?
2. Explain the **Page Setup** Dialog box in short.
3. What is **Word Processing**?
4. What is **Application Software**?
5. List **Types of Charts** (List Five) available in MS Word.
6. What is **Header-Footer**?
7. What is **Active Cell**?
8. List Types of **Cell Addressing**?
9. **What is a Spreadsheet**?
10. Write Steps to Create Presentation in MS Power Point?
11. Write on **Searching**?
12. What is **Filtering Facility**?

**Q.3 (a) Write Short Note on Operating System. [5]**  
**(b) List Categories of PC Software with example. [5]**

**OR**

**Q.3 (a) What is WORD? Write down the features of Word Processor. [5]**  
**(b) Explain Editors In detail with Example. [5]**

**Q.4 (a) What is Mail Merge? Explain in detail with Example. [5]**  
**(b) What is a Template? Explain how to create and use Templates in MS Word. [5]**

**OR**

**Q.4 (a) Explain Spell and Grammar check in MS Word. [5]**  
**(b) Explain Table menu of MS Word. [5]**

**Q.5 (a) Explain Five Mathematical Functions with example. [5]**  
**(b) Explain Sorting and Filtering facility of MS Excel. [5]**

**OR**

**Q.5 (a) Explain Five Statistical Functions with example. [5]**  
**(b) What is Protection facility in MS Excel? Write a steps to set Protection on Worksheet [5]**

**Q.6 What is Power Point? Describe the Views available in Power Point. Also discuss usage of Power Point. [10]**

**OR**

**Q.6 What is Slide Transition? What are the different Slide Transitions available in Power Point? Write down the steps for Slide Transition and give special effects to Power Point slide. [10]**

~~~~~All The Best ~~~~~

**SARDAR PATEL UNIVERSITY**B.C.A. - I<sup>st</sup> SEMESTER UNDER (CBCS) NC (2010 Batch)

US01CBCA04 : Web Designing Fundamentals

Date : 18/11/2017

Time : 2:00 to 5:00

Max Marks : 70

Q.1 Multiple Choice Questions : [10]

1. Web information is stored in documents which are called \_\_\_\_\_.  
(a) Web pages (b) Web server (c) Web client (d) Web documents
2. The \_\_\_\_ is special software that runs on clients and used to query the server for information to be read.  
(a) Web client (b) Web browser (c) Web page (d) Web server
3. Which command is used to copy the contents from web page?  
(a) Ctrl + C (b) Ctrl + X (c) Ctrl + F (d) Ctrl + N
4. The \_\_\_\_\_ is displayed at the top of the browser window.  
(a) Title bar (b) Menu bar (c) Tool bar (d) Task bar
5. Refresh command is in \_\_\_\_\_ menu.  
(a) File (b) Edit (c) View (d) Tools
6. The \_\_\_\_ tag is used to break the line.  
(a) <P> (b) <BR> (c) <B> (d) <U>
7. The \_\_\_\_ tag is used for bold font.  
(a) <P> (b) <BR> (c) <B> (d) <U>
8. The \_\_\_\_ tag is used for order list.  
(a) <OL> </OL> (b) <B> (c) <I> (d) <UL> </UL>
9. The \_\_\_\_ will create row in a table.  
(a) <P> (b) <TR> (c) <B> (d) <U>
10. To add a comment in Microsoft Front page, the \_\_\_\_\_ menu is used.  
(a) Edit (b) Insert (c) Format (d) View

Q.2 Short Answer Questions : Attempt any Six [12]

1. What is Internet?
2. What is Search Engine? Give examples.
3. What are special characters?
4. Explain MARQUEE tag.
5. Explain <A> tag.
6. Explain the checkbox control.
7. Explain the password control.
8. List the features of Microsoft Front page.

- Q. 3 (a) Write a note on WWW. [4]  
(b) Explain Internet Addressing. [4]

OR

- (a) Write a short note on Modem. [4]  
(b) Write a note on Services provided by the Internet. [4]

- Q. 4 (a) Explain Menu-bar in detail. [4]  
(b) Write a note on Components of Browser window. [4]

OR

- (a) Explain Control box and Title bar. [4]  
(b) Explain various setting in Internet Options. [4]

- Q. 5 (a) Explain FONT tag with an example. [4]  
(b) Explain different type of text styles. [4]

OR

- (a) Write a note on HR tag with attributes. [4]  
(b) Explain SUP & SUB with example. [4]

- Q. 6 (a) Explain how to create ORDER List. [4]  
(b) Explain how to create BULLETED list. [4]

OR

- (a) Explain TABLE creation of HTML in detail. [4]  
(b) Write a detail note on IMAGE tag. [4]

- Q. 7 (a) Write a short note on <frameset> with all the associated tags and attributes. [4]  
(b) Write a note on <form> tag with all the associated attributes and tags. [4]

OR

- (a) Write a note on text controls with all the associated attributes. [4]  
(b) Write a note on drop down control with all the associated attributes and tags. [4]

- Q. 8 (a) Write a note on Standard toolbar of Microsoft Front page. [4]  
(b) Write a note on modifying the attributes of the <body> tag in Microsoft Front page. [4]

OR

- (a) Explain the Different Tab views of Microsoft Front page. [4]  
(b) Write a note on inserting <font> tag in Microsoft Front page. [4]

————— ✕ —————



[30]

SEAT No. \_\_\_\_\_

No. of Printed Pages : 2

**SARDAR PATEL UNIVERSITY**

**B.C.A. (Sem. - I) EXAMINATION**

**DATE: 11/11/2017, SATURDAY**

**TIME: 10:00 A.M. To 01:00 P.M.**

**US01CBCA06 – Personal Computer & Software Packages**

**Total Marks: 70**

**Q-1 Select an appropriate option.**

**[10]**

1. The system clock is used to mark the date and time of creation or modification of files is called \_\_\_\_\_  
a. Time Sharing    b. Time Stamping    c. Time Loading    d. None of these
2. The \_\_\_\_\_ is flexible plastic disk that has magnetic coating on one or both sides.  
a. USB Drive    b. Mouse    c. Hard Disk Drive    d. Floppy Disk Drive
3. The spacing between the two lines can be set using \_\_\_\_\_ option.  
a. format – paragraph    b. format – text  
c. format – character    d. format - line
4. Which of the following function key activates the spelling and grammar?  
a. F5    b. F7    c. F9    d. Shift + F7
5. Which of the following is the extension of writer file?  
a. .ods    b. .odp    c. .odt    d. .docx
6. Which are various possibilities for applying filters?  
a. Auto Filter    b. Standard Filter    c. Advanced Filter    d. All of these
7. Calc sheet have maximum of \_\_\_\_\_ Rows.  
a. 1,093,567    b. 1,078,543    c. 1,433,678    d. 1,048,576
8. Which option can be used to set custom timings for slides in a presentation?  
a. Rehearsal    b. Slider Timings    c. Slide Show Setup    d. Slider Timer
9. Which file format can be added to an Impress show?  
a. .jpg    b. .giv    c. .wav    d. All of these
10. Which types of fonts are best suitable for titles and headlines?  
a. serif fonts    b. sans serif fonts    c. text fonts    d. picture fonts

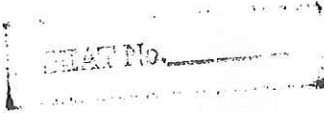
①

(P.T.O.)

- Q-2 Answer the following questions. (Any Ten) [20]**
1. Explain the Find and Replace Operations.
  2. What is Word count?
  3. Define Operating system and give 5 examples of Operating System.
  4. What is template?
  5. What are header and footer?
  6. What is use of spelling and grammar?
  7. What is the meaning of Pivot table?
  8. What is Active Cell?
  9. When it is suitable to use Pie Chart?
  10. Write down the steps to insert picture in power point slides?
  11. What do you mean by presentation tools?
  12. What do you mean by slide transition?
- Q-3 A. Draw and Explain parts of the main Writer window in detail. [6]**  
**B. Explain Editors in detail with more than one example. [4]**
- OR**
- Q-3 A. What is Personal Computer? Explain in detail. [6]**  
**B. Explain Classification of PC Software. [4]**
- Q-4 A. Explain page size and margin in writer. [5]**  
**B. What is table? Write steps to create table in writer. [5]**
- OR**
- Q-4 A. Explain print dialog box. [5]**  
**B. Explain mail merge in detail. [5]**
- Q-5 A. Explain any three Mathematical Functions with example. [6]**  
**B. Explain the filter facility of Calc in details. [4]**
- OR**
- Q-5 A. Explain any three Statistical Functions with example. [6]**  
**B. What is cell addressing? Explain different types of cell addressing available in Calc. [4]**
- Q-6 A. Write the short note on features of presentation tool. [5]**  
**B. How can you protect your workbook and worksheet from unauthorized access? [5]**
- OR**
- Q-6 A. Describe the views available in Libre Impress. [5]**  
**B. Discuss the different types of slide transition available in Libre Impress. [5]**

*Best of luck*

[29]



SC

No. of Printed Pages: 2

**SARDAR PATEL UNIVERSITY**  
**First Year BCA (Semester – I) (CBCS) EXAMINATION**

**DATE: 13/11/2017, Monday**

**TIME: 10:00a.m to 1:00p.m**

**US01CBCA07: FUNDAMENTALS OF WEB DESIGNING [New]**

**Total Marks: 70**

**Note:** 1. All questions are compulsory. 2. Figures to the right indicate marks.  
3. Start a new question from a new page.

**Q.1 Answer the Following: [10]**

- a. Full form of HTTP is \_\_\_\_\_  
1. Hypertext Transition Protocol 2. Hypertext Transition Portability  
3. Hypertext Transfer Protocol 4. None of these
- b. Opening multiple tabs together in a single browser is called \_\_\_\_\_  
1. Multiple browsing 2. Multi browsing  
3. Tabbed browsing 4. None
- c. What is the short-cut-key to perform the Find operation?  
1. Ctrl + E 2. Ctrl + G 3. Ctrl + N 4. Ctrl + F
- d. HTML stands for \_\_\_\_\_  
1. Hyper Tags Markup Language 2. Hyper Text Markup Language  
3. High Tags Markup Language 4. None of these
- e. <UL> is used for giving UNDERLINE effect to text.  
1. TRUE 2. FALSE
- f. \_\_\_\_\_ is used to get < symbol  
1. &less; 2. &les; 3. &ls; 4. &lt;
- g. \_\_\_\_\_ tag is used to create a Hyperlink.  
1. <hr> 2. <a> 3. <anc> 4. <td>
- h. \_\_\_\_\_ tag will create a Row in a Table.  
1. <tr> 2. <row> 3. <td> 4. <th>
- i. To play an audio file in web page, use the \_\_\_\_\_ tag.  
1. <audio> 2. <video> 3. <source> 4. <multimedia>
- j. To convert a drop-down list into a List box, \_\_\_\_\_ attribute is used with <select>  
1. name 2. size 3. multiple 4. value

**Q.2 Answer the Following: [ANY TEN] [20]**

- a. Give the Full Form of URL and WWW.  
b. List any 4 components of Browser window.  
c. List the options of Edit menu.  
d. Explain SUP and SUB with example.  
e. Explain <br> tag.  
f. Explain <blockquote> tag.  
g. List the attributes of <TABLE>.  
h. Explain the <CAPTION> with its attribute.  
i. Explain the <FRAMESET> with its attributes.  
j. Explain the form tag with all its attributes.  
k. List the components of Libre Office writer/web.  
l. What is a semantic element? List out.

(1)

(P.T.C.)

Q.3

- a. Write a note on any one service provided by Internet. [05]
  - b. Explain any 3 components of browser window. [05]
- OR**
- a. List and explain the File Menu options. [05]
  - b. Write a note on E-Mail service of the Internet. [05]

Q.4

- a. Write a note on General Structure of an HTML file. [05]
  - b. Write a note on <BODY> with its attributes and proper example. [05]
- OR**
- a. Write a note on <UL> giving its associated tags with their attributes with an example. [05]
  - b. Write a note on <HR> with its attributes and proper example. [05]

Q.5

- a. Write a note on <TABLE> tag giving all its attributes with an example. [05]
  - b. Write a note on <FRAME> giving its attributes with a proper example. [05]
- OR**
- a. Write a note on <TD> giving its attributes with a proper example. [05]
  - b. Write a note on <A> giving its attributes with a proper example. [05]

Q.6

- a. Write a note on TEXT control in HTML with associated attributes. [05]
  - b. Write a note on RADIO control in HTML with associated attributes. [05]
- OR**
- a. Write a note on <AUDIO> along with associated tags and attributes in HTML5. [10]

\*\*\*\*\*Best Of Luck\*\*\*\*\*

(2)

[A-28]

**Q-1 Select the correct option from the following questions.****10**

- 1 \_\_\_\_\_ is way to simplify the equation.  
A. Boolean Algebra      B. K-MAP      C. BOTH      D. NONE
- 2  $A+A'B+A'B'=?$   
A. 1      B. 0      C. A      D. A'
- 3 In k-map, octets eliminates \_\_\_\_\_ variable.  
A. one      B. two      C. three      D. four
- 4 The relationship between a function and its binary variables can be represented in \_\_\_\_\_.  
A. truth table      B. decoder      C. encoder      D. multiplexer
- 5 A combinational circuit that performs the arithmetic addition of two bits is called \_\_\_\_\_.  
(A) Full Adder      (B) Half Adder      (C) Binary Adder      (D) Decoder
- 6 A \_\_\_\_\_ is a memory element that stores a binary digit.  
A. binary adder      B. decoder      C. multiplexer      D. flip-flop
- 7 In D flip-flop, when CLK is low then input is \_\_\_\_\_.  
A. high      B. low      C. Don't care      D. Not change
- 8 A multiplexer also called a \_\_\_\_\_.  
A. data multiplier      B. data selector      C. data inverter      D. data remover
- 9 The NOR gate has two or more input signals. If all inputs are \_\_\_\_\_, the output is high.  
A. low      B. high      C. both A and B      D. none
- 10 7. In Comparator, \_\_\_\_\_ gate is use for comparing bits in word.  
A XOR      B AND      C NOR      D XNOR

**Q-2 Answer the following questions. (ATTEMPT ANY TEN)****20**

- 1 Describe the NAND, NOR gate.
- 2 Explain commutative law.
- 3 Draw the circuit for :  $(A \oplus B)'(BC)(A \oplus C)$
- 4 Describe quad in k-map

(P. T. O.)

|     |                                                                |    |
|-----|----------------------------------------------------------------|----|
| 5   | Simplify using k-map $F(A,B,C)=\Sigma(1,2,5)$                  |    |
| 6   | Describe encoder in short.                                     |    |
| 7   | Draw the circuit of half adder.                                |    |
| 8   | Describe binary adder in short.                                |    |
| 9   | Define : Flipflop, Register                                    |    |
| 10  | Explain D flip-flop in short.                                  |    |
| 11  | Define : shift register. What are the types of shift register? |    |
| 12  | Draw the circuit of Ring counter.                              |    |
| Q-3 | A Write note on: De'Morgan's first and second theorems.        | 10 |
|     | <b>OR</b>                                                      |    |
| Q-3 | B Explain AND, XOR, NAND gates.                                | 10 |
| Q-4 | A Explain 3x8 line decoder in detail.                          | 5  |
|     | B What is k-map? Explain octet with example.                   | 5  |
|     | <b>OR</b>                                                      |    |
| Q-4 | A Explain SOP in detail.                                       | 5  |
|     | B Explain comparator with example.                             | 5  |
| Q-5 | A Explain full adder in detail.                                | 4  |
|     | B Explain 4x1 multiplexer                                      | 6  |
|     | <b>OR</b>                                                      |    |
| Q-5 | A Explain Half adder with an example.                          | 4  |
|     | B Explain binary subtractor in detail.                         | 6  |
| Q-6 | A Explain shift left register.                                 | 5  |
|     | B Explain ring counter in short.                               | 5  |
|     | <b>OR</b>                                                      |    |
| Q-6 | A Explain shift-right register.                                | 5  |
|     | B Explain controlled buffer register.                          | 5  |

————— X —————

[9/A9]

SC

No. of Questions: 2

SARDAR PATEL UNIVERSITY

External Examination

F.Y.BCA (Sem-1)

US01EBCA01: Digital Computer Electronics

Date: 08-11-2017

Time: 10.00 am – 12.00 noon

Marks: 70

Wednesday

Q-1 Select the correct option from the following questions.

10

- 1 An invert gate is also called a \_\_\_\_\_ gate.  
A. NOR                      B. NOT                      C. XNOR                      D. NAND
- 2 De Morgan's first theorem says that a NOR gate is equivalent to a \_\_\_\_\_  
A. bubbled OR              B. bubbled NOR              C. bubbled AND              D. AND bubbled
- 3 In Comparator, \_\_\_\_\_ gate is use for comparing bits in word.  
A XOR                      B AND                      C NOR                      D XNOR
- 4 In k-map, pair eliminates \_\_\_\_\_ variable.  
A. one                      B. two                      C. three                      D. four
- 5 A \_\_\_\_\_ is a memory element that stores a binary digit.  
A. binary adder              B. decoder                      C. D flipflop                      D. multiplexer
- 6 A gate is a logic circuit with one or more input signals but only \_\_\_\_\_ output signal.  
A. two                      B. one                      C. three                      D. four
- 7 A register is a group of \_\_\_\_\_ that work together as a unit.  
A. flip-flop                      B. decoder                      C. multiplexer                      D. gates
- 8 Ring counter producing words with 1 high bit, which shifts \_\_\_\_\_ position per clock pulse  
A. one                      B. two                      C. three                      D. none
- 9 \_\_\_\_\_ is way to simplify the equation.  
A. Boolean Algebra              B. K-MAP                      C. BOTH                      D. NONE
- 10 In half adder XOR gate's output is.....  
A. carry                      B. sum                      C. reminder                      D. none

Q-2 Answer the following questions. (ATTEMPT ANY TEN)

20

- 1 Write truth table for :  $A'B+B'C$
- 2 Describe the NAND, NOR gates.
- 3 Explain distributive law.
- 4 Describe pair in k-map.

(1)

(P.T.0)

- 5 Define encoder and decoder.
- 6 Explain sum of product.
- 7 Draw the circuit diagram of Half Adder.
- 8 What are the differences between Half and Full Adder?
- 9 Define Multiplexer. What is the use it?
- 10 Define : register and shift register. What are the types of shift register?
- 11 Draw timing diagram of Ring Counter.
- 12 Draw the circuit diagram of Controlled Buffer Register.

- Q-3 A Explain associative and commutative law. 6  
 B Explain AND, OR gates with diagram and truth table. 4

**OR**

- Q-3 A Write note on: De'Morgan's first and second theorem. 6  
 B Explain XOR and NOT gates with diagram and truth table. 4

- Q-4 A Explain 8x3 line encoder in detail. 5  
 B Explain comparator with example. 5

**OR**

- Q-4 A Explain 3x8 line decoder in detail. 6  
 B What is k-map? Explain octet with example. 4

- Q-5 A Explain Half adder in detail. 4  
 B Explain 4x1 multiplexer. 6

**OR**

- Q-5 A Explain Full adder in detail. 4  
 B Explain 4 bit binary subtractor with circuit diagram. 6

- Q-6 Explain shift left and shift right registers in detail. 10

**OR**

- Q-6 Explain D flip-flop (clocked and unclocked) in detail. 10

*Best of luck*

(2)



[A10]

SEAT No. \_\_\_\_\_

No. of Printed Pages : 2

SARDAR PATEL UNIVERSITY  
BCA EXAMINATION, 1<sup>st</sup> SEMESTER

8<sup>th</sup> November Wednesday, 2017

10:00a.m. to 12:00 p.m.

US01EBCA02[Information Technology in Businesses]

Max. Marks: 70

- Q-1 Multiple Choice Question.[Each Question carries one Mark] [10]
- 1) Heuristics and models are the parts of \_\_\_\_\_  
(A) Data (B) Information  
(C) knowledge (D) Wisdom
  - 2) \_\_\_\_\_ are people who develop and operate information systems.  
(A) suppliers (B) end users  
(C) managers (D) IS specialists
  - 3) The concept of hardware resources includes all \_\_\_\_\_ and \_\_\_\_\_ media .  
(A) physical and logical (B) data and logical  
(C) physical and data (D) none of the above
  - 4) \_\_\_\_\_ programs controls and supports the operations of a computer system.  
(A) operating system (B) payroll  
(C) word processing (D) all of the above
  - 5) \_\_\_\_\_ normally works on structured to semi structured environments and utilize the model base and database for optimum utilization of resources.  
(A) TPS (B) DSS  
(C) MIS (D) EIS
  - 6) Software includes \_\_\_\_\_ and \_\_\_\_\_.  
(A) coding (B) programs and procedures  
(C) syntax (D) none of the above
  - 7) \_\_\_\_\_ marketing establish two – way transaction between a business & its customers.  
(A) Interactive (B) Targeted  
(C) Sales force auto main (D) None of the above
  - 8) E.R.P stands for \_\_\_\_\_  
(A) Enterprise Resources Planning  
(B) Extranet Resources Planning  
(C) Extranet Relationship Planning  
(D) Enterprise Relationship Planning
  - 9) Online auction websites are the example of \_\_\_\_\_ E-commerce category.  
(A) B2B (B) B2C  
(C) C2C (D) None
  - 10) Customer service and support is an application area of \_\_\_\_\_.  
(A) ERP (B) CRM  
(C) SCM (D) None

(1)

(PTO)

- Q-2 Give Answers for the following:(Any ten) [20]
- 1 Draw a data pyramid for management perspective.
  - 2 What is information system?
  - 3 Explain the meaning of DSS, TPS and MIS.
  - 4 Discuss different IT goals for business.
  - 5 Discuss in brief various IT challenges for business.
  - 6 Draw information system model.
  - 7 Discuss Interactive Marketing in brief.
  - 8 Discuss the objectives of computer-based systems.
  - 9 What do you mean by Cash Management?
  - 10 What is the Scope of E-commerce?
  - 11 List major application clusters in CRM.
  - 12 How Product and Service Transformation can help a company to optimize the Strategic impact of Internet?
- Q -3 A) Discuss IS framework for business professional. [5]  
 B) Explain information technologies. [5]
- OR
- Q -3 A) Explain information system activities. [5]  
 B) Explain what are system, information system and importance of information system in business. [5]
- Q -4 A) Write a note on people resources and hardware resources. [5]  
 B) Explain managerial challenges of IT. [5]
- OR
- Q -4 A) Describe components of an information system. [5]  
 B) Write a difference between data and information. [5]
- Q -5 Discuss HRM with following functions: [10]  
 (a) HRM and the Internet  
 (b) HRM and the Corporate Intranets
- OR
- Q -5 Discuss Accounting System with following functions: [10]  
 (a) Order Processing  
 (b) Inventory Control
- Q -6 A) Explain Financial Management System in detail. [5]  
 B) Explain Scope of E-commerce as B2C. [5]
- OR
- Q -6 A) Explain Supply Chain Management in detail. [5]  
 B) Identifying E-business and E-commerce Strategies as matrix representation. [5]

[A-38]

SARDAR PATEL UNIVERSITY  
BCA (SEMESTER - I )(NC) EXAMINATION (2010 Batch)  
Thursday , 16<sup>th</sup> November ,2017  
MATHEMATICS : US01FBCA02  
(Mathematics )

Time : 02:00 p.m. to 04:00 p.m.

Maximum Marks : 70

Que.1 Fill in the blanks.

10

- (1) The number of elements in the power set of a set  $\{a, b, c, d, e\}$  are .....
- (a) 0 (b) 8 (c) 16 (d) 32
- (2) The set  $\{x \in R / 0 < x < 1\}$  is .....
- (a) Finite (b) Infinite (c) Empty (d) none
- (3) If  $f(x) = 2x - 3$ , then  $f^2(2) = \dots\dots\dots$
- (a) -1 (b) 2 (c) 0 (d)  $4x-6$
- (4)  $A = \{1, 3, 5, \dots\dots\dots\}$  is closed under .....
- (a) addition (b) subtraction (c) division (d) multiplication
- (5)  $(a^{-1})^{-1} = \dots\dots\dots$
- (a) e (b)  $a^{-1}$  (c) a (d)  $a^{-2}$
- (6) If group G is commutative then  $ab \dots\dots\dots ba, \forall a, b \in G$
- (a) < (b) > (c)  $\neq$  (d) =
- (7) If  $u=(1,2)$  and  $v=(2,2)$  then  $u + v = \dots\dots\dots$
- (a) 7 (b) (3,2) (c) (4,3) (d) (3,4)
- (8) If  $u = (a, b)$  and  $v = (c, d)$  then  $u \cdot v = \dots\dots\dots$
- (a)  $ab + cd$  (b)  $ac+bd$  (c)  $ac - bd$ , (d)  $ad + bc$
- (9) Median of 4, 7, 3, 11, 17, 14, 9, 8 is .....
- (a) 9.5 (b) 9 (c) 8.5 (d) 8
- (10) Mode of 5, 7, 9, 11, 8, 18, 28, 20, 16, 14 is .....
- (a) 11 (b) 12.5 (c) 14 (d) does not exist

Que.2 Answer the following ( Any Ten )

20

- (1) Define power set and find the power set of a set  $\{a, b, c, d\}$  .

①

- (2) Let  $f(x) = x^3 + 2x + 1$  and  $g(x) = 2x^2 + 1$  find  $f \circ g$ .
- (3) Show that the functions  $f : R \rightarrow R$  defined by  $f(x) = \frac{3x}{4} - 9$  is one to one.
- (4) Define ideal in a ring with example.
- (5) Show that right cancellation law holds in a group  $G$ .
- (6) Find  $\frac{(n-1)!}{(n+2)!}$ .
- (7) Find  $x, y, z$  if  $(2x, 4, y) = (6, x+z, 2z)$ .
- (8) Find  $(u+v) \cdot w$  and  $u \cdot w + v \cdot w$  for  $u = (3, -2, 1), v = (5, -3, 4), w = (-1, 6, -7)$ .
- (9) Find  $x$  if  $A = \begin{bmatrix} 4 & x+2 \\ 2x-3 & x+1 \end{bmatrix}$  is symmetric.
- (10) Find median and mode of 8, 12, 20, 40, 8, 7, 5.
- (11) The mean of 200 items was 50. Later on it was found that two items were wrongly read as 92 and 8 instead of 192 and 88. Find out the correct mean.
- (12) The intelligence quotients (IQ's) of 10 boys is given by  
70, 120, 110, 101, 88, 83, 95, 98, 107, 100  
Find the Mean IQ.

- Que.3 (a) State and prove Distributive laws. 7
- (b) Find the inverse of the real valued function  $f(x) = \frac{2x-3}{5x-8}$ ,  $x \neq 8/5$  where it exists. 3

OR

- Que.3 (a) If  $f(x) = x^2 - 3x + 2$  then find  $f(x^3)$ ,  $f(3x-7)$ ,  $f(x+5)$  5
- (b) By using Mathematical induction Method, prove that  $1^2 + 2^2 + \dots + n^2 = \frac{n(n+1)(2n+1)}{6}$ . 5

- Que.4 (a) Let  $Q$  be the set of all rationals and  $*$  defined on  $Q$  by  $a * b = a + b - ab$ . 6
- (i) Is  $(Q, *)$  a semi group?  
(ii) Find the identify element for  $(Q, *)$ .  
(iii) Find  $3 * 4$ ,  $2 * (-5)$ .
- (b) Define identity element of a group and prove it is unique. 4

OR

- Que.4 (a) In a ring  $R$ , prove that (i)  $a \cdot 0 = 0 \cdot a = 0$  (ii)  $a(-b) = (-a)b = -ab$ . 5
- (b) If  $G = \{1, 2, 3, 4\}$  is a group under multiplication modulo 5, find multiplication table for it and find  $2^{-1}, 3^{-1}, 4^{-1}$ . 5

Que.5 (a) If  $A = \begin{bmatrix} 1 & -2 & 3 \\ 6 & 0 & 9 \\ 5 & -7 & 11 \end{bmatrix}$  then find  $A + A^T$  ;  $A - A^T$  ;  $AA^T$  5

(b) If  $u = (2, -2, 0, -5, 3)$  ,  $v = (-3, 4, 4, 6, 7)$  ,  $w = (-8, 5, -2, -6, 3)$  ,  $z = (3, -9, 2, -4, 4)$ , then find  $5u + 3z + 4w - v$  ,  $5u - 4v + 3z$  . 5

OR

Que.5 (a) If  $A = \begin{bmatrix} 2 & -1 \\ 1 & 0 \\ 3 & 4 \end{bmatrix}$  ,  $B = \begin{bmatrix} 1 & -2 & -5 \\ 3 & 4 & 0 \end{bmatrix}$  , then prove that  $(AB)^T = B^T A^T$  . 5

(b) Find the inverse of  $A = \begin{bmatrix} -1 & 2 & 2 \\ 2 & 3 & 6 \\ 1 & 1 & -7 \end{bmatrix}$  , if possible . 5

Que.6 (a) Calculate the mean, median, mode, harmonic mean and geometric mean for the following data. 5

| $x_i$ | $f_i$ |
|-------|-------|
| 10    | 14    |
| 30    | 23    |
| 50    | 27    |
| 70    | 21    |
| 90    | 15    |

(b) Eight coins were tossed together and the number of heads (X) resulting was noted. The operation was repeated 256 times and the frequency distribution of the number of heads is given below. Calculate the Median. 5

| No.ofheads | Frequency | No.ofhead | Frequency |
|------------|-----------|-----------|-----------|
| 0          | 1         | 5         | 52        |
| 1          | 9         | 6         | 29        |
| 2          | 26        | 7         | 7         |
| 3          | 59        | 8         | 1         |
| 4          | 72        |           |           |

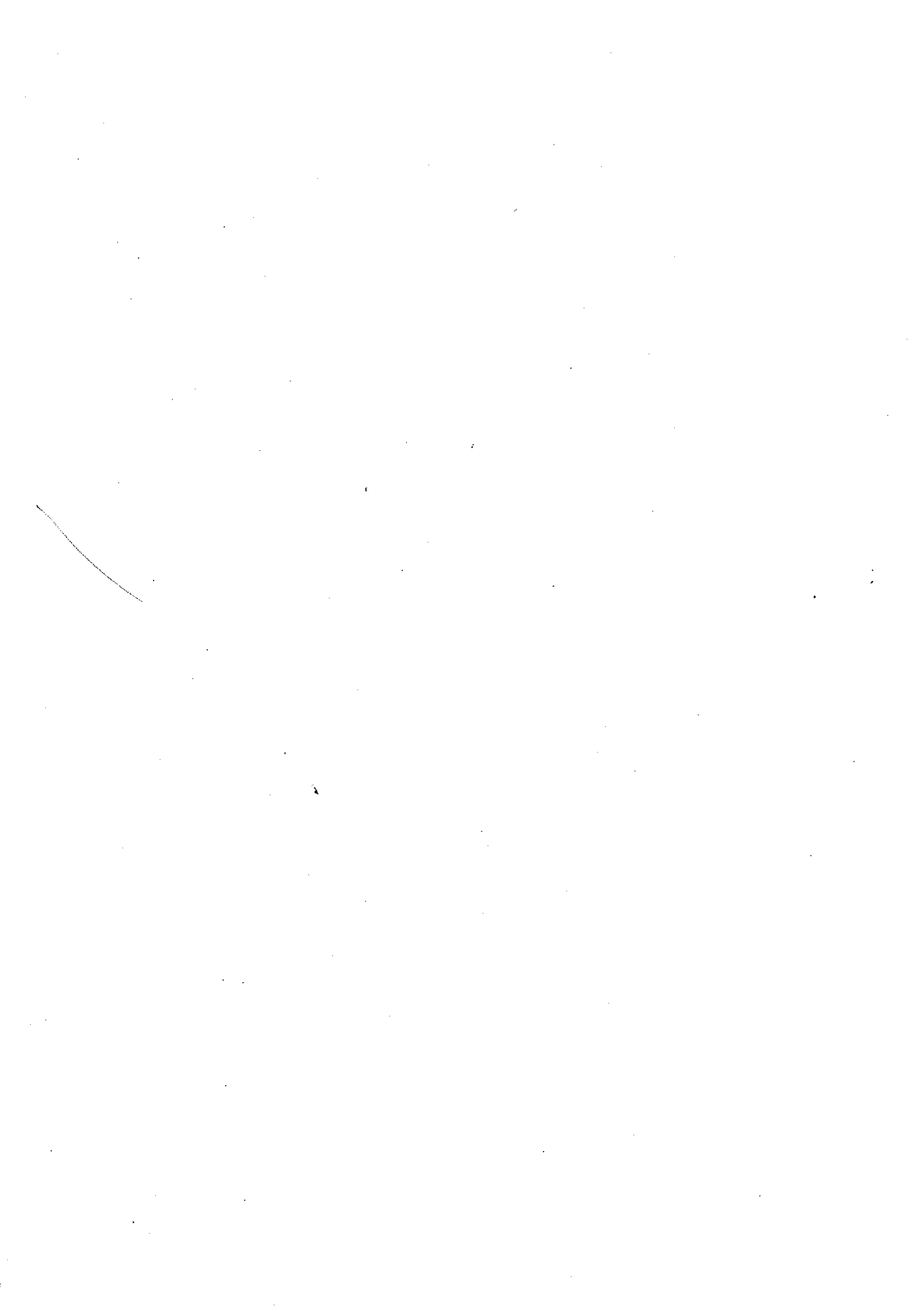
OR

Que.6 (a) The following table gives the weights of 31 persons in a sample enquiry. Calculate mean, Harmonic mean, Geometric mean, Median and Mode. 10

| Weight | No.ofpersons | Weight | No.ofpersons |
|--------|--------------|--------|--------------|
| 130    | 3            | 148    | 5            |
| 135    | 4            | 149    | 2            |
| 140    | 6            | 150    | 1            |
| 145    | 6            | 157    | 1            |
| 146    | 3            |        |              |

~~X~~

③



SC

(10 & A-11)

SEAT No. \_\_\_\_\_

No. of Printed Pages : 3

# SARDAR PATEL UNIVERSITY

## BCA SEM-I EXAMINATION (Reg.&NC)

2017

TUESDAY, 7<sup>TH</sup> NOVEMBER

10:00 am to 12:00 noon

**US01FBCA02: MATHEMATICS-I**

**Total Marks: 70**

**Q:1** Choose the correct option in the following, mention the correct option with the answers in the answer book. [10]

- (1) Median of 4, 7, 3, 11, 17, 14, 9, 8  
(a) 9.5                      (b) 9                      (c) 8.5                      (d) 8
- (2) A Square matrix A is said to be symmetric if....  
(a)  $A \neq A^T$                       (b)  $A = -A^T$                       (c)  $A = A^T$                       (d) None
- (3) The number of elements in the power set of a set { a, b, c, d } are:  
(a) 4                      (b) 16                      (c) 8                      (d) 32
- (4) Let  $A = \{1, 0\}$ , then A closed under:  
(a) multiplication                      (b) addition                      (c) Division                      (d) Subtraction
- (5) The identity for a group  $(R-\{0\}, \times)$  is:  
(a) 1                      (b) 0                      (c) -1                      (d) e
- (6) ~~Arithmetic~~ mean of 2, 3 and 6 is  
(a) 6                      (b) 3.67                      (c) 3                      (d) 2
- (7) The set  $\{x \in \mathbb{Q} : 2 < x < 7\}$  is:  
(a) finite                      (b) Infinite                      (c) Empty                      (d) none
- (8) If  $f(x) = 2x - 3$ , then  $f^2(1) =$   
(a) -1                      (b) 5                      (c) -5                      (d)  $4x - 9$
- (9) Every monoid are:  
(a) group                      (b) ring                      (c) semigroup                      (d) none
- (10)  $4(1, 2, 1) + 2(1, 3, 3) = \dots\dots\dots$   
(a) ( 6 , 14 , 10 ) (b) ( 6 , 10 , 14 ) (c) ( 6 , 14 , 10 ) (d) ( 10 , 6 , 14 )

**Q:2** Answer the following in short (**Attempt any Ten**). [20]

- (1) Define: Ring and Unity of a ring. (PTO)

- (2) Find the inverse of the matrix  $\begin{bmatrix} 3 & 7 \\ 2 & 5 \end{bmatrix}$ .
- (3) Find Median height (in cm) of seven students for the following data  
150, 165, 154, 156, 159, 145, 157
- (4) Obtain mean of observations 3, 5, 6, 10, 4, 7, 9, 12 and 10.
- (5) If S is a nonempty set with the operation  $x * y = x$ . Is the operation:  
(i) associative?, (ii) commutative ?
- (6) Find the power set of a set  $\{1, 2, 3\}$ .

If  $A = \begin{bmatrix} 2 & 0 & -1 \\ 4 & 5 & 3 \\ 0 & 2 & 5 \end{bmatrix}$  then find  $A + A^T$  and  $A - A^T$ .

- (7) Define qualitative data.
- (8) Find x, y, z if  $(2x, 3, y) = (4, x + z, 2z)$ .
- (9) In  $(\mathbb{Z}_7, \times_7)$ , find  $3^{-1}, 6^{-1}$ , if exists.
- (10) If  $f(x) = x + 3$  and  $g(x) = 3x + 1$  then find  $f \circ g(0)$  and  $g \circ f(-1)$ .
- (11) For a, b rational number, define  $a * b = ab/2$ . Find identity element for given binary operation.

**Q:3**

- (a) Let n denote a positive integer. Suppose a function L is defined as

$$L(n) = \begin{cases} 0 & \text{if } n=1 \\ L(\lfloor n/2 \rfloor) + 1 & \text{if } n > 1 \end{cases} \text{ Find } L(25) \text{ and } L(34).$$

[5]

- (b) Define invertible function and hence find inverse of the function

$$f(x) = \frac{7x-3}{5x-2}, \quad x \neq \frac{2}{5}$$

[5]

**Q:3**

**OR**

- (c) Prove that  $1^2 + 2^2 + 3^2 + \dots + n^2 = \frac{n(n+1)(2n+1)}{6}$ .

[5]

- (d) By using algebra of sets, prove that  $(\phi \cup A) \cap (B \cup A) = A$ .

[5]

**Q:4**

- (a) If  $G = \{1, 2, 3, 4, 5, 6\}$  then prove that G is a group under multiplication modulo 7. Is it finite group?

[5]

- (b) Define a group homomorphism. Show that  $f: G \rightarrow G'$  defined by  $f(a) = 2^a$  is a homomorphism where G is a group of real numbers under addition and  $G'$  is a group of positive real numbers under multiplication.

[5]

**Q:4**

**OR**

(2)



(c) For  $a, b \in \mathbb{Q}$  (rational numbers), define  $a*b = ab/3$ . [5]

(i) Is  $(\mathbb{Q}, *)$  Semigroup? (ii) Is  $(\mathbb{Q}, *)$  Monoid ?

(iii) Find the inverses of elements of  $(\mathbb{Q}, *)$ , if it exist.

(d) For  $a, b$  rational number, define  $a*b = a + b - ab$ . Is  $(\mathbb{Q}, *)$  commutative? [5]  
Show that  $(\mathbb{Q}, *)$  is Monoid and find its inverse if it exist.

**Q:5**

(a) Using Cremer's rule solve the following simultaneous equations [5]

$$3x - 2y = 5, 5x + 4y = 1.$$

(b) If  $A = \begin{bmatrix} 1 & -2 & 3 \\ 6 & 0 & 9 \\ 5 & -7 & 11 \end{bmatrix}$  then find  $A + A^T$ ,  $A - A^T$  and  $A A^T$  [5]

**Q:5**

**OR**

(c) Let  $\vec{u} = (-3, 4, 8)$  and  $\vec{v} = (2, -5, 4)$ . Find: [5]

(i)  $\vec{u} - 2\vec{v}$  (ii)  $3\vec{u} - 5\vec{v}$  (iii)  $\|\vec{u}\|$  (iv)  $\|\vec{v}\|$  (v)  $\|4\vec{u} - \vec{v}\|$

(d) If  $A = \begin{bmatrix} 2 & 4 \\ 3 & 0 \\ 3 & 2 \end{bmatrix}$ ,  $B = \begin{bmatrix} 4 & 2 & 3 \\ 7 & 1 & 5 \end{bmatrix}$  then prove that  $(AB)' = B'A'$ . [5]

**Q:6** Calculate Mean, Median and Mode for the following data. [10]

|                   |     |     |     |     |     |     |     |     |     |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| weight(lbs) X     | 130 | 135 | 140 | 145 | 146 | 148 | 149 | 150 | 157 |
| no. of persons(f) | 3   | 4   | 6   | 6   | 3   | 5   | 2   | 1   | 1   |

**OR**

**Q:6** The marks of 40 students who attended a workshop competitive exam are as follows: [10]

27 32 57 34 36 48 49 31 51 34

49 45 51 29 47 36 50 46 30 46

35 35 48 41 53 36 37 47 47 30

43 45 42 30 46 50 28 44 48 49

Classify the above data in exclusive classes & one of them being

40 - 44. Also obtain mean of the distribution.

— X —

(3)

