Seat No.			Set	Ρ
	M.C.A. (Seme	ester - I) (CBCS) Exar	nination Mar/Apr-2018	
	IN	Science TRODUCTION TO CO	MPUTERS	
Time: 2	1/2 Hours		Max. Mark	s: 70
Instruc	tions: 1) Question N 2) Attempt an 3) Figures to	o. 1 and 2 are compulsory y 3 questions from Q. no. the right indicate full marks	/. 3 to Q. no. 7 s.	
Q.1 A	<ul> <li>Choose correct</li> <li>1) Computer Mo</li> <li>a) DVU</li> <li>c) VDU</li> </ul>	alternatives. nitor is also known as	b) UVD d) CCTV	10
	2) In which lang a) English c) High level	uage is source program w	ritten? b) Symbolic d) Temporary	
	<ol> <li>Instructions a</li> <li>a) Character</li> <li>c) Binary wo</li> </ol>	nd memory address are re code rd	epresented by b) Binary codes d) Parity bit	
	<ul><li>4) MICR stands</li><li>a) Magnetic</li><li>c) Magnetic</li></ul>	for Ink Character Reader Ink Cases Reader	<ul><li>b) Magnetic Ink Code Reader</li><li>d) None of these</li></ul>	
	5) Which one of a) Speaker c) Scanner	these is not input device?	b) Mouse d) Keyboard	
	6) Which of the a) EDSAC c) CDC-1604	following is first generatior	n of computer? b) IBM-1401 d) ICL-2900	
	<ul> <li>7) A computer p language is c</li> <li>a) Interpreter</li> <li>c) Compiler</li> </ul>	rogram that converts an e alled a/an ·	ntire program into machine b) Simulator d) Assembler	
	8) The most imp a) Compactr c) Durability	ortant advantage of a vide ess	eo disk is b) Potential capacity d) Cost effectiveness	
	9) Which is the a) RAM c) EPROM	volatile memory?	b) ROM d) EEPROM	
	10)Which numbe groups of fou a) Binary c) Octal	r system is commonly use r binary digits?	ed as a shortcut notation for b) Decimal d) Hexadecimal	

.

	B)	<ul> <li>State True or False.</li> <li>1) One megabyte is equivalent to 1024 Byte</li> <li>2) A system that can process two or more programs is called Multiprogramming.</li> <li>3) The overall functions of the O.S. are to manage I/O, files and memory.</li> <li>4) A group of 8 bits is called a Nibble</li> </ul>	04
Q.2	A)	<ul><li>Write short notes on the following.</li><li>a) Assembler</li><li>b) Plotter</li></ul>	80
	B)	<ul> <li>Solve the following.</li> <li>a) Convert Binary to decimal (10010)<sub>2</sub></li> <li>b) Convert Decimal to Octal (684)<sub>10</sub></li> </ul>	06
Q.3	Atte a) b)	<b>mpt the following questions:-</b> Explain following Linux commands with suitable examples : i) adduser ii) in iii) talk iv) wall Explain the difference between machine language & assembly language.	08 06
Q.4	Atte a) b)	<b>mpt the following questions:-</b> What is computer network? Explain different network models. Explain classification of computers according to size.	07 07
Q.5	Atte a) b)	mpt the following questions:- Explain following DOS commands with suitable examples : i) TREE ii) DOSKEY iii) FORMAT iv) RECOVER Explain working of digitizer.	08 06
Q.6	Atte a) b)	mpt the following questions:- Describe the features of MS-Power point. What is software? Explain different types of software with example.	07 07
Q.7	Atte a)	<b>mpt the following questions:-</b> What is pointing device? Explain any two pointing devices with advantages and disadvantages?	07
	b)	Write a short note on evolution of computers.	07

			SLR-SC	<b>)-2</b>
Sea No.	t		Set	Ρ
		M.C.A. (Semester - I) (CBCS) Examination Mar/Apr Science	-2018	
Time	v <b>0</b> 1/		Max Marke	
Inst	5.∠/2 ructio	nous ns: 1) Ouestion No. 1 and 2 are compulsory		. 70
moti	doth	<ul><li>2) Attempt any 3 questions from Q. no. 3 to Q. no. 7.</li><li>3) Figures to the right indicate full marks.</li></ul>		
Q.1	A)	Choose correct alternatives.		10
		<ol> <li>Reusability of code in C is supported by</li> <li>Eucros</li> </ol>		
		c) Pointers d) Files		
		2) What is the output of the following program?		
		#include <stdio.h></stdio.h>		
		void main()		
		float $a = 5, b = 2;$		
		int c;		
		c = a % b;		
		}		
		a) 2.5 b) Compiler error		
		c) 1 d) 2		
		3) The statement $char ch = '7'$ :		
		would store in ch		
		a) The character Z		
		c) Z along with the single inverted commas		
		d) Both a and b		
		4) If a is an integer variable, a = 5 / 2; will return a value		
		a) 2.5 b) 3		
		5) Consider the declaration, int $i = 3$ :		
		This declaration tells the C compiler to :		
		a) Reserve space in memory to hold the integer value.		
		<ul> <li>c) Store the value 3 at this location.</li> </ul>		
		d) All of these a, b, c		
		6) Function declaration specifies		
		<ul> <li>a) Function name</li> <li>b) The return type of the function</li> </ul>		
		c) The types of parameters it accepts		
		d) All a, b, c		
		7) A <b>float</b> occupies in memory		
		a) 4 bits c) 32 bits b) 2 bytes d) 16 bits		

- 8) Which of the following is not the storage class in C
  - a) Register b) Static
  - c) Recursion d) External
- 9) Which of the following is not feature of a variable defined to have an automatic storage class?
  - a) Storage CPU registers.
  - b) Default initial value An unpredictable value
  - c) Scope Local to the block in which the variable is defined.
  - d) Life Till the control remains within the block in which the variable is defined.

10)All macro substitutions in a	a program are do	าе
---------------------------------	------------------	----

- a) Before compilation of the program
- b) After compilation
- c) During execution
- d) None of these

B)	State whether following statements are True or False				
	1)	&& is a binary operator, whereas, ! is a unary operator.			
	2)	The three types of loops available in C are for, while, and switch.			

- 3) In **switch** statement multiple cases can use same expression.
- 4) There is no limit on the number of functions that might be present in a C program.

Q.2	A)	<ul><li>Write short notes on the following.</li><li>1) Algorithm</li><li>2) Increment and Decrement operators.</li></ul>	08
	B)	<ul><li>Explain the following terms.</li><li>1) Draw a flow chart to check whether the number is even or odd.</li><li>2) Describe the ternary operator.</li></ul>	06
Q.3	Ans A)	wer the following If the ages of Ram, Shyam and Aiay are input through the keyboard, write a	08
	в)	program to determine the youngest of the three. Explain <b>switch</b> statement.	06
Q.4	Ans A) B)	wer the following Write a program to print out all Armstrong numbers between 1 and 500. If sum of cubes of each digit of the number is equal to the number itself, then the number is called an Armstrong number. Explain the difference between the parameter passing mechanism "call by value" and "call by reference". Which is more efficient?	08 06
Q.5	Ans A) B)	wer the following. What is a pointer? What are the advantages of using pointer? Explain pointer to array with example. What are preprocessor directives?	08 06
Q.6	Ans A)	wer the following. Write a program to read data from keyboard, write it to a file called INPUT, and read the same data from the INPUT file and display it on the screen.	08

B) Explain the different kinds of loops available in C with example. 06

#### Q.7 Answer the following.

- A) What does a storage class mean? Mention different storage classes 08 available in C 06
- B) How do you pass parameters to main() function?

Sea	t			Cot	
No.				Set	Ρ
		M.C.A. (Seme DISCRE	ester - I) (CBCS) Exami Science ETE MATHAMATICAL S	nation Mar/Apr-2018 STRUCTURES	
Time	: 2½	Hours		Max. Marks	s: 70
Instr	uctio	ons: 1) Question N 2) Attempt any 3) Figures to t	o. 1 and 2 are compulsory. y 3 questions from Q. no. 3 t he right indicate full marks.	to Q. no. 7	
Q.1	A)	<ul> <li>Choose correct</li> <li>1) A relation R o</li> <li>a) Reflexive</li> <li>c) Transitive</li> </ul>	<b>alternatives.</b> n set A is called as poset if b) d)	Symmetric All of these	10
		<ol> <li>A vertex of de a) One vertex</li> <li>c) Isolated</li> </ol>	gree 1 is called as k b) d)	Pendent None of these	
		<ul> <li>3) Let L be the la</li> <li>a) a v b = b</li> <li>c) a ∧ b = a</li> </ul>	attice then for any a, b € L, a b) d)	a ∧ b = a if & only if a ∨ b = a a ∧ b = b	
		<ul><li>4) A graph in wh</li><li>a) Planer gra</li><li>c) Singular</li></ul>	ich does not exist multiple e ph b) d)	dges & loop is called as Simple graph None of these	
		<ul> <li>5) If all the inters</li> <li>F then it is cal</li> <li>a) Tautology</li> <li>c) Contingent</li> </ul>	in last column of given stat led as b) cy d)	ement pattern are neither T nor Contradiction Valid	
		6) In combination a) $\frac{(n-1)!}{(n-r)!}$ c) $\frac{n!}{(n-1)!}$	n <sup>n</sup> C <sub>r</sub> = b) d)	$\frac{\frac{n!}{r!(n-r)!}}{\frac{n!}{(r-n)!}}$	
		7) If A = $\begin{bmatrix} 1 & 2 \\ 5 & 0 \\ 1 & 2 \\ a \end{bmatrix}$ c) -1	$\begin{bmatrix} -3\\1\\-3 \end{bmatrix}$ then $ A  =$ b)	1 -2	
		<ul> <li>8) In set theory (</li> <li>a) (A – B) ∩ (</li> <li>c) (A – B) U (</li> </ul>		$(B - A) \cap (A - B)$ $(A - B) \cup (A - B)$	
		<ul> <li>9) If matrix A is s</li> <li>a)  A  = 0</li> <li>c)  A  = 1</li> </ul>	singular if b) d)	$ A  \neq 0$ $ A  = -1$	
		10)In group G wh a) a * b = b * c) a * a <sup>-1</sup> = a <sup>-</sup>	hich of the following law is ca a b) <sup>1</sup> * a = e d)	alled as commutative a * e = e = e * a None of these	

		S	LR-SQ-3
	B)	Fill in the blanks 1) A single vertex with loop is a path of length 2) In set $A \cap U = \$ 3) If p is true, q is false then $p \rightarrow q = \$ 4) ${}^{n}P_{r} = \$	04
Q.2	A)	Write short notes on the following. <ol> <li>Eulerian graph</li> <li>Contradiction</li> </ol>	08
	B)	<ul><li>Answer the following.</li><li>1) Define symmetric matrix, skew symmetric &amp; give its examples.</li><li>2) Explain the normal forms</li></ul>	06
Q.3	An: a)	<b>swer the following</b> Define (G, *) be a group & show that each element in group has only only inverse in G	one <b>07</b>
	b)	Solve the following system by reduction method x + 3y + 3z = 12 x + 4y + 4z = 15 x + 3y + 4z = 13	07
Q.4	An a)	swer the following Prove using truth tables 1) $\sim (p \land q) \equiv \sim p \lor \sim q$ 2) $\sim (p \lor q) \equiv \sim p \land \sim q$	07
	b)	Define walk, path, cycle & trial with examples	07

## Q.5

Answer the following.	
a) Explain bipartite graph with example	06
<b>b)</b> Explain Warshall's algorithm & using it find transitive closure of relation A = {1,2,3,4} & R = {(1,1), (1,4), (2,1), (2,3), (3,1), (3,3), (3,4), (4,1), (4,2)}	08
Answer the following. a) Explain the Application of residue Arithmetic's to computers b) Show that ${}^{n+1}C_r = {}^{n}C_{r-1} + {}^{n}C_r$	07 07

#### Q.7 Answer the following.

Q.6

a)	Explain the group code with example.	07
b)	A family of three sisters & 5 brothers to be arranged for photograph, In how	07
	many ways they can be sited if,	

- 1) No condition
- 2) All the sisters sit together

Seat No.	:	Set	Ρ
		M.C.A. (Semester - I) (CBCS) Examination Mar/Apr-2018 Science DIGITAL CIRCUITS AND MICROPROCESSORS	
Time	· 21/2	Hours Max Marks	70
Instru	uctic	ns: 1) Question No. 1 and 2 are compulsory.	
		<ul><li>2) Attempt any 3 questions from Q. no. 3 to Q. no. 7</li><li>3) Figures to the right indicate full marks.</li></ul>	
Q.1	A)	Choose correct alternatives.1) Demultiplxer is circuit which hasa) Many I/P, one O/Pb) Many I/P, Many O/Pc) One I/P, Many O/Pd) None of these	10
		<ul> <li>2) To remove race around condition if F/F, F/F is used.</li> <li>a) RS</li> <li>b) JK</li> <li>c) T</li> <li>d) MS JK</li> </ul>	
		<ul> <li>3) In IC 7404 NOT gates are designed.</li> <li>a) 3</li> <li>b) 4</li> <li>c) 6</li> <li>d) 8</li> </ul>	
		<ul> <li>4) In Full Adder Gate gives carry.</li> <li>a) AND b) OR</li> <li>c) NOT d) NAND</li> </ul>	
		5) The 8086 microprocessor has byte pipeline are used. a) 3 b) 4 c) 6 d) 8	
		<ul> <li>6) The memory capacity for 8085 microprocessor is</li> <li>a) 32 K</li> <li>b) 64 K</li> <li>c) 128 K</li> <li>d) 16 K</li> </ul>	
		<ul> <li>7) In arithmetic operation in 8085 microprocessor, result always stored in</li> <li> Register.</li> <li>a) Acc</li> <li>b) B</li> <li>c) Source</li> <li>d) None of these</li> </ul>	
		8) The Half adder has Input. a) 2 b) 3 c) 1 d) 4	
		<ul> <li>9) In 8086 microprocessor Flag registers are used.</li> <li>a) 2</li> <li>b) 3</li> <li>c) 1</li> <li>d) 9</li> </ul>	
		10) A + 1 = a) 0 b) 1 c) A d) None of theses	

	B)	<ul> <li>State True or False</li> <li>1) In sequential circuit memory are used to store the last condition result.</li> <li>2) OR gate is a complimentary gate.</li> <li>3) The data bus for 8085 is a 8 bit.</li> <li>4) HLT is data transfer instruction.</li> </ul>	04
Q.2	a) b)	Define counter? Explain combined 3 bit asynchronous Counter. Explain universal adder/ subtractor.	08 06
Q.3	a)	Explain all types of gates with its logic symbol, logical expression and truth table.	08
	b)	State and explain different type of addressing mode in 8085 microprocessor	06
Q.4	a) b)	Define Shift register? Give different types. Explain any two types in brief. Explain maximum mode for 8086 microprocessor.	08 06
Q.5	a)	Give different type of instruction of 8085. Explain each type with suitable example.	08
	b)	Explain flag registers in 8086.	06
Q.6	a) b)	Draw the internal architecture of 8086. Explain BIU section in brief. Explain different types of K map with suitable example.	08 06
Q.7	a) b)	Define F/F. Explain RS, T and D F/F. Explain decoder.	08 06

Seat No.		5	Set	Ρ
		M.C.A. (Semester - I) (CBCS) Examination Mar/Apr-2018 Science MANAGEMENT		
Time	21⁄2	lours Max. M	/larks	: 70
Instru	uctic	<ul> <li>ns: 1) Question No. 1 and 2 are compulsory.</li> <li>2) Attempt any 3 questions from Q. no. 3 to Q. no. 7.</li> <li>3) Figures to the right indicate full marks.</li> </ul>		
Q.1	A)	Choose correct alternatives.         1) Invoice is issued for         a) Cash Sales       b) Credit Sales         c) Cash received       d) None of the above         2) J.F. stands for       a) Luck File		10
		<ul> <li>a) Sunk The b) Sust Found</li> <li>b) Sust Found</li> <li>c) Journal Folio</li> <li>d) None of the above</li> <li>3) Creditors Account shows balance.</li> <li>a) Nominal</li> <li>b) Real</li> <li>c) Debit</li> <li>d) Credit</li> </ul>		
		<ul> <li>4) Normal or standard of Current Ratio is</li> <li>a) 1:1 b) 1:2</li> <li>c) 2:1 d) None of the above</li> </ul>		
		<ul> <li>5) Which of the following is a service cost centre?</li> <li>a) Machine Shop</li> <li>b) Store Department</li> <li>c) Assembly Shop</li> <li>d) None of the above</li> </ul>		
		<ul> <li>6) Cost Unit for Brickwork Industry is</li> <li>a) Per Unit</li> <li>b) Thousand</li> <li>c) Kgs.</li> <li>d) None of the above</li> </ul>		
		<ul> <li>7) In case of Banking transactions S.B. A/c stands for</li> <li>a) Sales Business A/c</li> <li>b) Saving Bank A/c</li> <li>c) Sick Business A/c</li> <li>d) None of the above</li> </ul>		
		<ul> <li>8) HRD Stands for</li> <li>a) Human Relations Department</li> <li>b) Human Resources Department</li> <li>c) Human Rescue Department</li> <li>d) None of the above</li> </ul>		
		<ul> <li>9) Key success variable for Sugar Industry is</li> <li>a) Quality of water</li> <li>b) Number of Customer</li> <li>c) Recovery Rate per tone</li> <li>d) None of the above</li> </ul>		
		10)Training to the staff improvesa) Working Skillb) Tensionc) Negligenced) None of the above		

2) Plant & Machinery is a Current Asset.
3) Bank overdraft means amount payable to the Bank.
4) EOQ technique is used for HRD Department.
A) Write short notes on the following.
1) Going Concern Concept.
2) Subsidiary Books in accounting process.

#### B) Explain the following.

1) Types of Budget.

State True or False.

1) Budgets are action plan.

B)

Q.2

2) Cost classification according to function.

#### Q.3 Following Balances are extracted from the books of the M/s. Anand & Co. 14

	₹		₹
Cash in hand	6,000	Closing Stock	21,000
Sundry Debtors	23,300	Bank Long Term Loan	20,000
Bills Receivable	10,000	Sundry Creditors	15,000
Machinery A/C	36,000	Bills Payable A/C	8,000
Furniture A/C	7,600	Outstanding Expenses	1,500
Prepaid Insurance	300		
Net Profit	7,200		

From the above

- a) Prepare the Balance Sheet of the firm & ascertain the amount of capital.
- b) Compute i) Current Ratio &
  - ii) Liquid Ratio

#### Q.4 Following transactions are extracted from the books of shri Ashok.

2017	
April 1	Started business with Cash ₹ 71,000.
2	Purchased goods from Mahesh Rs. 20,000 on Credit.
5	Deposited cash in to Bank of India Rs.30,000.
9	Sold goods to Dhanraj Rs.25,000 on credit.
12	Purchase furniture of Rs.10,000 for cash.
15	Paid to Mahesh by cheque of Bank of India Rs.10,000.
18	Paid Salary by cheque Rs.4,000.

1) Journalise the above transactions in the books of Shri Ashok.

2) Prepare Ledger Accounts for the above in the books of Shri Ashok.

#### Q.5 A) Debit EOQ.

From the following data, work out the EOQ of a component 'x'

Annual Demand	15000 units.
Ordering cost per order	Rs.180/-
Carrying cost	20% on inventory
Price per unit	Rs.300

B) From the following information prepare production budget for the month of August 2017.

Product	Estimated Stock on 1 <sup>st</sup> Aug. 2017	Estimated stock on 31 <sup>st</sup> Aug. 2017	Estimated sales as per Budget
A	60,000	50,000	3,80,000
В	40,000	30,000	2,40,000

07

07

07 07

04

06

08

Q.6	Ans A) B)	wer the following. What is communication? Explain the various methods of communication. Explain the need for supply chain Management.	07 07
Q.7	Ans A) B)	<b>wer the following.</b> Explain the activities in Management control system. Explain the concept of Key Success Variables.	07 07

110.						
		Μ	.C.A. (Semes	ster - II) (CBCS) Scien	Examiı ce	nation Mar/Apr-2018
			OBJECT C	RIENTED PROG	RAMN	ING USING C++
Time	: 2½	Hou	irs			Max. I
Instr	uctio	ns:	1) Question No	o. 1 and 2 are compu	ulsory.	
			<ol> <li>Attempt any</li> <li>Figures to the</li> </ol>	3 questions from Q	. no. 3 to marks.	o Q. no. 7
Q.1	A)	<b>Ch</b> 1)	oose correct a Which membe	<b>alternatives.</b> Ir function of class ca	annot mo	odifv its obiects attributes?
		,	<ul><li>a) Friend func</li><li>c) Constant m</li></ul>	ctions nember function	b) d)	Private member functions Static member function
		2)	#include main (){ int i=5; ++i++; printf("%d",i	);		
			a) 5 c) 7		b) d)	6 Compilation error
		3)	<ul><li>Which one of t</li><li>a) Friend funct</li><li>b) Friend funct</li><li>c) Friend funct</li><li>d) All of the a</li></ul>	he following options ction can access pub ction can access pro ction can access priv bove	is corre blic data tected d vate data	ct? members of the class. ata members of the class. a members of the class.
		4)	Which of the for a) Member fu c) Virtual func	ollowing function / ty nction ction	pe of fur b) d)	nction cannot be overloade Static function Both b and c
		5)	A class having a) A public pr c) A protected	no public construct otected class d class	ors is b) d)	A public class A private class
		6)	If new operato a) Copy cons c) Static cons	r is used, then the co tructor tructor	onstructo b) d)	or function is? Default constructor Dynamic constructor
		7)	Which of the for a) Multiple c) Distributive	ollowing is not a type	e of inhe b) d)	ritance? Multilevel Hierarchical
		8)	Which of the fo a) >> c) +	ollowing operator is o	overload b) d)	led for object cout? << =
		9)	Which of the fo	ollowing ways are le	gal to ac	cess a class data member

Seat No.

## SLR-SQ-7

Set Ρ

- 10

- er using this pointer?
  - a) this->x c) \*this.x

- b) this.x d) \*this-x

าร

. Marks: 70

		10)Pointers are ofa) integer data typeb) character data typec) unsigned integer data typesd) None of these	
	B)	<ol> <li>State True or False.</li> <li>In C++, only one catch block can handle all the exceptions.</li> <li>A class object passed to a function template must overload any operators used on the class object by the template.</li> <li>%= is not a operator in C++.</li> <li>Constructors can be virtual like virtual destructors.</li> </ol>	04
Q.2	A)	<ul><li>Write short notes on the following.</li><li>1) Access Specifies</li><li>2) Manipulators in C++</li></ul>	08
	B)	<ul> <li>Answer the following.</li> <li>1) What are the applications of void data-type in C++?</li> <li>2) Can we assign a void pointer to an int type pointer? If not, why? How can we achieve this?</li> </ul>	06
Q.3	Ans a) b)	<b>swer the following</b> What is virtual function? Explain how it supports to implement dynamic binding. Explain multiple Inheritances with one example.	14
Q.4	Ans a) b)	swer the following Explain dynamic memory allocation in C++. State the difference between malloc and new. Write a program in C++ to find whether entered number is divisible by 8, 9 or 11.	14
Q.5	Ans a) b)	<b>swer the following.</b> Write an OOP in C++ to check whether entered number is Armstrong or not. Do you think friend function violates encapsulation? Explain.	14
Q.6	Ans a) b)	<b>swer the following.</b> Explain multiple catch statement with one example. Write a note on parameterized constructor.	14
Q.7	Ans a)	swer the following. Explain Exception Handling mechanism with one example.	14

**b)** Explain dynamic memory allocation in C++.

		Μ	.C.A. (Semester - II) (CBCS Scie	) Examination Mar/Apr-2018 nce		
			DATA STR	UCTURES		
Time	: 2½	Ηοι	Jrs	Max. Marks: 7	0	
Instr	uctic	ons:	<ol> <li>Question No. 1 and 2 are com</li> <li>Attempt any 3 questions from</li> <li>Figures to the right indicate full</li> </ol>	ipulsory. Q. no. 3 to Q. no. 7 III marks.		
Q.1 A	A)	<b>() Ch</b> 1)	<ul> <li>Choose correct alternatives.</li> <li>The process of arranging data in alphabetical or numerical order is called</li> </ul>			
			a) Sorting c) Traversal	<ul><li>b) Searching</li><li>d) Merging</li></ul>		
		2)	The most useful applications of is in a) Networks c) Refinery	queues, Priority Queues and Linked Lists b) Simulations d) None of these		
		3)	Linked List can be a) Single c) Circular	b) Double d) All of these		
		4)	A 'C' data structure called a stru item is identified by its own iden member of the structure. Member a) Record c) Field	cture is a group of items in which each ifier, each of which is known as a er is also known as b) File d) Table		
		5)	A strictly binary tree with 'n' leav a) n * n c) 2n-1	es always contains nodes. b) 2n d) n <sup>2</sup> - 1		
		6)	Representation of two dimension a) Row-Major c) Both (a) and (b)	nal array in memory is b) Column – Major d) None of these		
		7)	Stack is a) Dynamic data Structure c) Constantly changing object	<ul><li>b) An ordered collection of items</li><li>d) All of the above</li></ul>		
		8)	Stack is sometimes called a a) Push Down List c) Pop Down List	b) Push Down Array d) Pop up Array		
		9)	Priority Queue can be a) Ascending c) Both (a) and (b)	<ul><li>b) Descending</li><li>d) None of these</li></ul>		
		10	)The address of the first element a) First Address	of an array is called b) Base Address		

#### c) Initial Address

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#### Seat No.

Set Ρ

- - d) Location Address

	B)	<ul> <li>State True or False.</li> <li>1) All leaf nodes are called internal nodes.</li> <li>2) An array is a static data structure.</li> <li>3) The number of sub trees of a node is called its degree</li> <li>4) An empty tree is height balanced.</li> </ul>	04	
Q.2	A)	Write short notes on the following. 1) Sparse Matrix 2) Circular linked list	04 04	
	B)	<ul><li>Answer the following.</li><li>1) What do you mean by Primitive Data Type?</li><li>2) What do you mean by Queue? State its different types.</li></ul>	06	
Q.3	An a) b)	swer the following Convert the following infix expression into postfix using stack. Infix Expression: $((a + b) + c^* (d + e) + f)^*(g+h)$ . Write a program in C to implement stack data structure.	14	
Q.4	<ul> <li>Answer the following</li> <li>a) What do you mean by sorting? Perform Bubble sort on following series. Series : 44, 55, 12, 42, 94, 18, 06, 67, 35, 89 and 15</li> <li>b) Write a function for adding and deleting elements from a queue</li> </ul>			
Q.5	An a) b)	<ul> <li>Answer the following.</li> <li>a) What do you mean by Backtracking? Discuss in detail mechanism of Backtracking with suitable example.</li> <li>b) Explain binary search algorithm with example.</li> </ul>		
Q.6	An a) b)	a <b>swer the following.</b> Differentiate between Stack and Queue Differentiate between Array and Linked List	14	
Q.7	An a) b)	swer the following. Implement singly Linked List in C. Define Array. Discuss representations and applications of single and multidimensional array with suitable examples.	14	

		Μ	.C.A. (Semester - II) (CBC	CS) Examination Mar/Apr-2018
			OPERAT	
Time	e: 2½	Ηοι	ırs	Max. Ma
Insti	ructio	ons:	<ol> <li>Question No. 1 and 2 are c</li> <li>Attempt any 3 questions from 3) Figures to the right indicated</li> </ol>	compulsory. om Q. no. 3 to Q. no. 7 e full marks.
Q.1	A)	Cł	oose correct alternatives.	
		1)	A vulnerability of firewalls is _ to be an authorized host by m a) Mail attack c) Spoofing	, in which an unauthorized host pretend neeting some authorization criterion. b) Tunnel d) Scheduler
		2)	The such as word proc browsers and also define the solve users computing proble a) Hardware c) Microsoft Package	cessors, spreadsheets, compilers, and wel ways in which these resources are used t ms. b) User d) Application programs
		3)	Time sharing requires communication between the c a) Non-interactive c) Disk-less	_ computer system, which provides direct user and the system. b) Interactive d) Disk-full
		4)	<ul><li>A, which consists of a</li><li>a) Ready queue</li><li>c) Job queue</li></ul>	ll processes in the system. b) Device queue d) Run queue
		5)	processes require an i that will allow them to exchan a) Independent c) Non-cooperative	nter-process communication mechanism ge data and information. b) Cooperative d) Real time
		6)	Under scheduling, once the process keeps the CPU u terminating or switching to the a) Preemptive c) Non-preemptive	the CPU has been allocated to a process, intil it releases the CPU either by e waiting state. b) Page replacement d) CPU
		7)	<ul> <li>A control block conta ownership, permissions, and</li> <li>a) Disk</li> <li>c) File</li> </ul>	ins information about the, includin location of the contents. b) Process d) Memory
		8)	<ul> <li> provides a set of methonecessary conditions cannot</li> <li>a) Deadlock tolerance</li> <li>c) Deadlock prevention</li> </ul>	ds for ensuring that at least one of the hold. b) Deadlock detection d) Deadlock avoidance

9) \_\_\_\_\_ involves breaking physical memory into fixed sized blocks called frames.

- a) Fragmentation
- c) Monitor

- b) Segmentation d) Paging

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10

arks: 70

Seat No.

04

08

06

- 10)\_\_\_\_\_ scheduling algorithm can leave some low priority processes waiting indefinitely.
  - a) First Come First Serve
  - c) Priority Scheduling
- b) Shortest Job Firstd) Most Recently used
- u) wost Recently

#### B) State True or False.

- 1) A nonvolatile storage loses its contents when the power to the device is removed.
- 2) The sequence of directories searched when a file is named, this operation is called search path.
- 3) The main advantage of the virtual memory scheme is that it enables users to run programs that are larger than actual physical memory.
- 4) A program is passive entity, such as the contents of a file stored on the disk.

#### Q.2 A) Write short notes on the following.

- a) Threads
- b) Swapping

#### B) Answer the following.

- a) What do you mean by File?
- **b)** Briefly state the meaning of PCB.

#### Q.3 Answer the following.

- a) Explain in detail concept of fragmentation with suitable example? 07
- b) What do you mean by safe state? Discuss in detail various mechanism of deadlock detection?07

#### Q.4 Answer the following.

a) Discuss in detail working of Round Robin for scheduling of processes given 07 below-

PID	Name	Burst time	Time Quantum
101	ABC	12 minute	
102	XYZ	15 minute	
103	PQR	6 minute	3 minute
104	MNO	9 minute	
105	STU	3 minute	

b) Discuss in detail different types of allocation methods as a part of file system
 07 implementation.

#### Q.5 Answer the following.

- a) What do you mean by Demand paging? Discuss in detail how to handle a page fault?
   07
- b) What do you mean by Attack? Enlist and discuss in detail different kinds of system program threats.
   07

#### Q.6 Answer the following.

- a) Discuss in detail working of shortest seek time first algorithm when a Disk head is positioned at 38.
   07 and 100 and 100
  - Queue 86, 55, 49, 64, 95, 63, 72, 38, 81, 102, 61
- b) State the concept of process synchronization by explaining readers-writers
   07 problem in detail.

#### Q.7 Answer the following.

- a) What do you mean by Network OS? Differentiate between Distributed OS and 07 Multiprocessor time sharing systems?
- b) Explain in detail working of First In First Out page replacement algorithm for given below reference string having 03 frames for allocation. Reference string – 5, 3, 6, 4, 3, 8, 3, 9, 4, 8, 3, 8, 4, 6, 4, 3, 6, 5, 3, 6

Sea No.	t	Set F	2					
		M.C.A. (Semester - II) (CBCS) Examination Mar/Apr-2018						
	Science SOFTWARE ENGINEERING							
Time	: 2½	Hours Max. Marks: 7	0					
<ul> <li>Instructions: 1) Question No. 1 and 2 are compulsory.</li> <li>2) Attempt any 3 questions from Q. no. 3 to Q. no. 7.</li> <li>3) Figures to the right indicate full marks.</li> </ul>								
Q.1	A)	Choose correct alternatives.       1         1) Verification is focused on       .         a) Product       b) Process         c) Both       d) None         2) Which of the following is not a diagram studied in Requirement Analysis?         a) Use Cases       b) Entry Relationship Diagram	0					
		<ul> <li>c) State Transition Diagram</li> <li>d) Activity Diagram</li> <li>3) Which one of the following is not a step of requirement engineering?</li> <li>a) Elicitation</li> <li>b) Design</li> <li>c) Analysis</li> <li>d) documentation</li> </ul>						
		<ul> <li>4) In Design phase, which is the primary area of concern?</li> <li>a) Architecture</li> <li>b) Data</li> <li>c) Interface</li> <li>d) All of the mentioned</li> </ul>						
		<ul> <li>5) The intent of project metrics is</li> <li>a) minimization of development schedule</li> <li>b) for strategic purposes</li> <li>c) assessing project quality on ongoing basis</li> <li>d) both a and c</li> </ul>						
		<ul> <li>6) Which of the following is not a SQA plan for a project?</li> <li>a) evaluations to be performed</li> <li>b) amount of technical work</li> <li>c) audits and reviews to be performed</li> <li>d) documents to be produced by the SQA group</li> </ul>						
		<ul> <li>7) Software Maintenance includes</li> <li>a) Error corrections b) Enhancements of capabilities</li> <li>c) Deletion of obsolete capabilities d) All of the mentioned</li> </ul>						
		<ul> <li>8) Which of these is the functionality of 'Encapsulation'?</li> <li>a) Binds together code and data</li> <li>b) Using single interface for general class of actions</li> <li>c) Reduce Complexity</li> <li>d) All of the mentioned</li> </ul>						
		<ul> <li>9) Which of the following is / are White box technique?</li> <li>a) Statement testing</li> <li>b) Decision Testing</li> <li>c) Condition coverage</li> <li>d) All of these</li> </ul>						
		<ul><li>10)Which of the following is not used in measuring the size of the software</li><li>a) KLOC</li><li>b) Function Points</li></ul>						

c) Size of Module

d) None of theses

SLR-SQ-10

	B)	<ul> <li>State whether following statements are True or False.</li> <li>1) Beta testing is done at developers end.</li> <li>2) Requirements analysis is critical to the success of a development project.</li> <li>3) Requirements analysis is an Iterative process.</li> <li>4) A function-oriented design focuses on the entities in the system rather than the data processing activities.</li> </ul>	04
Q.2	A)	<ul><li>Write short notes on the following.</li><li>1) Management myths</li><li>2) Process Metrics and Software Process Improvement</li></ul>	08
	B)	<ul><li>Explain the following terms.</li><li>1) Explain why Software doesn't "wear out".</li><li>2) Explain loops testing.</li></ul>	06
Q.3	Ans A) B)	<b>wer the following.</b> Explain the Software measurement in detail. Explain metrics for software quality.	08 06
Q.4	Ans A) B)	<b>wer the following.</b> Explain design and software quality and the evolution of software design. Explain analysis principles in detail.	07 07
Q.5	Ans A) B)	<b>wer the following.</b> Explain prototyping model with its advantages. What is testing? Explain software testing strategies.	06 08
Q.6	Ans A) B)	<b>wer the following.</b> Explain data modeling in detail. Explain the mechanics of structured analysis.	07 07
Q.7	Ansv A) B)	<b>wer the following.</b> Explain Control Structure testing in detail. Explain how to manage the object-oriented software projects.	08 06

Seat No.			Set	Ρ
	M.C.	A. (Semester - III) (New) (CBCS) E	Examination Mar/Apr-2018	
		Science SYSTEM SOFTW	ARE	
Time: 2	2½ Ho	urs	Max. Marks	: 70
Instruc	ctions	<ul> <li>1) Question No. 1 and 2 are compulsory</li> <li>2) Attempt any 3 questions from Q. no.</li> <li>3) Figures to the right indicate full marks</li> </ul>	<sup>r.</sup> 3 to Q. no. 7. s.	
Q.1 /	A) C 1)	hoose correct alternatives. A macro processor is a) Machine dependant c) Syntax dependant	<ul><li>b) Machine independent</li><li>d) Software dependant</li></ul>	10
	2)	Bootstrap loader is loaded at the addres a) 0 c) Depends on machine	ss b)   80 d)   None of the these	
	3)	Loader that allows program relocation is a) Relocation loader c) Bootstrap Loader	3 b) Absolute loader d) Linking Loader	
	4)	Which of the following is not a type of as a) One pass c) Three pass	ssembler? b) Two pass d) Load and go	
	5)	<ul> <li>The task of scanning the source statem the various tokens, is known as</li> <li>a) Lexical analysis</li> <li>c) Semantic analysis</li> </ul>	ent, recognizing and classifying  b) Syntax analysis d) None of these	
	6)	<ul> <li> names symbols that are define by other control sections.</li> <li>a) EXTDEF</li> <li>c) EXTERN</li> </ul>	<ul><li>ed in this section but may be used</li><li>b) EXTREF</li><li>d) None of these</li></ul>	
	7)	<ul> <li>The dynamic linking postpones linking f</li> <li>a) Load</li> <li>c) Compile</li> </ul>	unction until time. b) Execution d) None of these	
	8)	This process, called syntactic analysis i a) Parser c) Lexical analyser	s performed by b) Scanner d) None of the these	
	9)	<ul> <li>The main data structures involved in a c</li> <li><u>a</u>) DEFTAB</li> <li>c) ARGTAB</li> </ul>	one-pass macro processors are b) NAMTAB d) All of these	
	1(	<ul> <li>D)What are the activities are performed by</li> <li>a) Assign address to all the statements</li> <li>b) Saves addresses assigned to be use</li> <li>c) Defines the symbols in the symbol ta</li> </ul>	/ pass-I of multi-pass assembler? ed in Pass-2 able	

d) All of these

	B)	<ul> <li>State True or False.</li> <li>1) Macro processors are machine dependant.</li> <li>2) A Bootstrap loader is responsible for loading the operating system.</li> <li>3) SIC machines do not support floating point data format.</li> <li>4) UltraSparc are CISC machine.</li> </ul>	04
Q.2	A)	<ul><li>Write short notes on the following.</li><li>1) Absolute loader</li><li>2) Conditional macro expansion.</li></ul>	80
	B)	<ul><li>Answer the following.</li><li>1) Explain lexical analysis.</li><li>2) Explain program blocks.</li></ul>	06
Q.3	Ans A) B)	wer the following. Explain relocation and program linking in detail. What are machine independent compiler features?	08 06
Q.4	Ans A) B)	wer the following Explain compiler design options in detail Explain different types of loader in detail.	08 06
Q.5	Ans A) B)	wer the following. Explain SIC and SIC/XE architecture in detail. Explain in brief basic macro processor function.	08 06
Q.6	Ans A) B)	wer the following. Explain machine dependant assembler features. What are macro processor design options?	08 06
Q.7	Ans A) B)	wer the following. What are the algorithm and data structures used for assembler? Explain in detail.	08 06
	DJ		00

Seat No.						S	Set	Ρ
	М.	C.A	A. (Semeste	er - III) (New) (CI Scie DB	BCS) Ex ence MS	amination Mar/Apr-201	8	
Time:	21⁄2	Ηοι	ırs			Max. M	larks	: 70
Instru	ictio	ns:	<ol> <li>1) Question N</li> <li>2) Attempt an</li> <li>3) Figures to</li> </ol>	No. 1 and 2 are con by 3 questions from the right indicate fu	npulsory. Q. no. 3 t Ill marks.	o Q. no. 7		
Q.1	A)	<b>Ch</b> 1)	noose correct In a relationa a) Relations c) Queries	t <b>alternatives.</b> Il schema, each tup	ele is divide b) d)	ed into fields called Domains All of the above		10
		2)	a) Alter c) Set	nmand can be used	l to modify b) d)	a column in a table Update Create		
		3)	Grant and rev a) DDL c) DCL	voke ares	statements b) d)	s. TCL DML		
		4)	The key to re a) Primary k c) Foreign k	epresent relationshi ey ey	p betweer b) d)	tables in called Secondary key None of the above		
		5)	A is a) Schema c) Data defir	s used to define ove nition language	erall desigi b) d)	n of the database Application program Code		
		6)	Data indepen a) Data is de b) Programs c) Programs d) Both B an	ndence means efined separately and s are not dependent s are not dependent nd C	nd not incl t on the ph t on the log	uded in programs. hysical attributes of data gical attributes of data		
		7)	The collection is called as _ a) Schema c) Data dom	n of information sto  nain	red in a da b) d)	atabase at a particular mome Instance of the database Independence	ent	
		8)	a) TOTAL c) ADD	word is used to find	d the numb b) d)	per of values in a column. COUNT SUM		
		9)	A relational d a) A criteria c) A tuple	latabase developer	refers to a b) d)	a record as A relation An attribute		
		10	) is a a) Standard c) Structure	full form of SQL. I query language ed query language	b) d)	Sequential query language Server side query language	9	

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### SLR-SQ-13 Г

	B)	<ul> <li>State True or False.</li> <li>1) The number of tuples in a relation is called its cardinality.</li> <li>2) Data elements in the database can be modified by changing the data dictionary.</li> </ul>	04
		<ul> <li>3) The relational model feature is that there is much more data independence than some other database models.</li> <li>4) The non procedural language that requires a user to specify the data to be retrieved without specifying exactly how to get it is.</li> </ul>	
Q.2	A)	Write short notes on the following. a) Views b) % ROW type	06
	B)	<ul><li>Answer the following.</li><li>a) What are strong and weak entities?</li><li>b) Explain ER model.</li></ul>	08
Q.3	Ans a) E b) E	<b>wer the following</b> Explain Generalization and Specialization with suitable example. Explain different types of data models.	07 07
Q.4	Ans a) ∖ b) E	<b>wer the following</b> What is cursor? Explain its types. Explain two phase commit protocol.	07 07
Q.5	Ans a) E b) E	<b>wer the following.</b> Explain log based recovery in details. Explain database architecture.	07 07
Q.6	Ans a) [ b) [	<b>wer the following.</b> Describe different DML commands with example. Explain different functions of DBMS.	07 07
Q.7	Ans a) E b) [	<b>wer the following.</b> Explain Boyce Codd's normal form with suitable example. Differentiate between primary key and unique constraint with example.	07 07

Seat	t	Set	Ρ		
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	141.	Science			
		JAVA PROGRAMMING			
Time	: 2½	ours Max. Marks:	70		
Instructions: 1) Question No. 1 and 2 are compulsory. 2) Attempt any 3 questions from Q. no. 3 to Q. no. 7 3) Figures to the right indicate full marks.					
Q.1	A)	Choose correct alternatives.) Which of the following is the feature of Java?a) Robustb) Platform independentc) Multithreadedd) All of these	14		
		<ul> <li>2) Which of the following is the component of JVM?</li> <li>a) Stack</li> <li>b) Registers</li> <li>c) Garbage collection heap</li> <li>d) All of these</li> </ul>			
		<ul> <li>B) Finalize () method is used to garbage collect an object</li> <li>a) True</li> <li>b) False</li> </ul>			
		<ul> <li>i) The this reference is used in conjunction with methods.</li> <li>a) Static</li> <li>b) Non-static</li> <li>c) Both a and b</li> <li>d) None of these</li> </ul>			
		<ul> <li>a) Exception class is a subclass of the class.</li> <li>b) SystemException</li> <li>c) ExceptionSystem</li> <li>d) UserException</li> </ul>			
		<ul> <li>a) Join()</li> <li>b) Alive()</li> <li>c) Sleep()</li> <li>d) Destroy()</li> </ul>			
		<ul> <li><i>package does define String and StringBuffer classes.</i></li> <li><i>java.lang</i></li> <li><i>java.mysql</i></li> <li><i>java.net</i></li> </ul>			
		<ul> <li>B) Which of the following is the highest class in the event-delegation model?</li> <li>a) java.util.EventListener</li> <li>b) java.util.EventObject</li> <li>c) java.awt.AWTEvent</li> <li>d) java.awt.event.AWTEvent</li> </ul>			
		<ul> <li>a) The drawImage() method of the Graphics class is used to draw an image on an applet.</li> <li>b) False</li> </ul>			
		0) method is used to register a keyboard event listener.a) KeyListener()b) addKistener()c) addKeyListener()d) eventKeyboardListener()			
		<ul> <li>1)The prepared Statement object allows you to execute parameterized queries.</li> <li>a) True</li> <li>b) False</li> </ul>			

		<ul> <li>12)The class is used to read charac</li> <li>a) FileReader</li> <li>c) ReadFile</li> </ul>	ters from the file b) ReaderFile d) FileRead	
		13)An interface is a pure abstract class. a) True	b) False	
		<ul><li>14)The suspend()method is used to termi</li><li>a) True</li></ul>	nate a thread? b) False	
Q.2	A)	<ul><li>Write short notes on the following.</li><li>1) Differentiate between interface and an</li><li>2) Package &amp; its uses</li></ul>	abstract class.	08
	B)	<ul><li>Answer the following.</li><li>1) Explain the use of final keyword with e</li><li>2) List the advantages of StringBuffer cla</li></ul>	xample ss.	06
Q.3	Ans a) b)	<b>swer the following</b> Create a windows application to add a new What is polymorphism? Explain run-time po	record using stored procedure.	14
Q.4	Ans a) b)	<b>swer the following</b> Explain different methods used for Inter-thro Define Object class. Explain different metho	ead communication ods of Object class.	14
Q.5	Ans a)	swer the following. What is the significance of Layout manager managers	s? Discuss briefly various layout	14
Q.6	b) Ans a) b)	What is applet? Explain the steps involved i swer the following. Describe the need of thread synchronization Programming? Explain with a suitable progra Write a program to handle mouse events ar	n Applet development. n. How is it achieved in Java ram nd mouse motion events.	14
Q.7	Ans a)	swer the following. What is stream? What is the difference betw streams? How are they used to capture inp Explain with suitable example how to create interface.	veen byte streams and characters ut from the user? a new thread using the Runnable	14

Time	: 2½	Ηοι	rs				Max. Marks:	70
Instr	uctio	ns:	1) Questi 2) Attemp 3) Figure	on No. 1 and 2 a ot any 3 question s to the right ind	are compulsor ns from Q. no. licate full mark	y. 3 t s.	o Q. no. 7	
Q.1	A)	<b>Ch</b> 1)	oose cor When 2 c transmiss a) burst c) invert	rect alternative or more bits in a sion, the error is error ed error	e <b>s.</b> data unit has called	bee b) d)	en changed during the random error none of these	10
		2)	Error dete a) Bit stu c) Hamm	ection at the dat uffing ning codes	a link layer is	ach b) d)	ieved by? Cyclic redundancy codes Equalization	
		3)	If there a in sendin rate) a) N c) (2N*L	re N routers fror g packet P(L->r .)/R	n source to de number of bits	estir in t b) d)	nation, total end to end delay he packet R-> transmission (N*L)/R L/R	
		4)	The reso reserved a) Packe c) Line s	urces needed for for the duration et switching switching	or communicat of session be	ion twe b) d)	between end systems are en end systems in Frequency switching Circuit switching	
		5)	The time to the clie a) STT c) PTT	taken by a pack ent is called	ket to travel fro	bm d b) d)	client to server and then back RTT None of the mentioned	
		6)	FTP serv a) 20 c) 22	er listens for co	nnection on po	ort r b) d)	number 21 23	
		7)	The file to a) data o c) client	ransfer protocol centric architectu server architect	is built on ure ure	b) d)	service oriented architecture none of the mentioned	
		8)	DHCP is a) IPv6 c) Both (	used for (a) and (b)		b) d)	IPv4 None of the mentioned	
		9)	The DHC a) dynar c) static	P server can pr nic allocation allocation	ovide the	b) d)	_ of the IP addresses. automatic allocation all of the mentioned	

**COMPUTER COMMUNICATION NETWORK** 

SLR-SQ-15

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		<ul> <li>10) What is the maximum number of IP addresses that can be assigned to hosts on a local subnet that uses the 255.255.255.224 subnet mask?</li> <li>a) 14</li> <li>b) 15</li> <li>c) 16</li> <li>d) 30</li> </ul>	
	B)	<ol> <li>State True or False.</li> <li>Ethernet II type of Ethernet framing is used for TCP/IP and DEC net.</li> <li>Physical, data link and network layers are network support layers and session, presentation and application layers are user support layers.</li> <li>User datagram protocol is called connectionless because all TCP packets are treated independently by transport layer.</li> <li>The domain name system translates Internet domain and host names to IP address.</li> </ol>	04
Q.2	A)	<ul><li>Write short notes on the following.</li><li>a) Interior Gateway Routing Protocol</li><li>b) Architecture of Email</li></ul>	08
	B)	<ul><li>Explain the following terms:</li><li>a) Humming Code</li><li>b) User agent message format</li></ul>	06
Q.3	Ansv a) V b) E	wer the following Vhat is computer communication network? Explain uses for mobiles users. Explain the term Home and wireless network with example.	07 07
Q.4	<b>Ans</b> a) H e <b>b)</b> E	wer the following low many ways error controlled in data link layer? Explain one method with example. Explain simplex protocol for a Noisy channel with diagram and example.	07 07
Q.5	Ansv a) V th b) V	wer the following. Vhat are the design issues in Network Layer? Explain service provided to ne Transport Layer. Vhat are the functions of router in network layer? Explain distance vector outing algorithm with suitable example.	07 07
Q.6	<b>Ansv</b> a) H e <b>b)</b> D	<b>wer the following.</b> low to prevent congestion in network layer? Explain the one method with xample. Describe the Leaky bucket algorithm with diagram and example.	07 07
Q.7	<b>Ansv</b> <b>a)</b> W a <b>b)</b> E	wer the following. Vhat are the Elements of transport layers in computer network? Explain the ny one elements in details Explain the architecture and services of electronic mail.	07 07

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No.				Je	
	M.	.C.A. (Semester	r - III) (New) (CBCS Science	) Examination Mar/Apr-2018	
			PROGRAMMING	WITH PHP	
Time	: 21⁄2	Hours		Max. Ma	rks: 70
Instr	uctio	ons: 1) Question N 2) Attempt an 3) Figures to	lo. 1 and 2 are compuls y 3 questions from Q. r the right indicate full ma	sory. no. 3 to Q. no. 7 arks.	
Q.1	A)	Choose correct 1) What is the c a) \$count + - c) + + count	<b>alternatives.</b> orrect way to add 1 to t +;	he \$count variable? b) count + +; d) \$count = +1	10
		2) What is the c a) . c) ;	orrect way to end a PH	P statement? b) New line d)	
		<ul><li>3) Which of the</li><li>a) sort()</li><li>c) rsort()</li></ul>	functions is used to sor	t an array in descending order? b) asort() d) dsort()	
		4) What will be t php<br \$fruits "banar echo ( ?>	he output of the followi = array ("apple", "orang na"); count(\$fruits, 1));	ng PHP code? ge", array ("pear", "mango"),	
		a) 3		b) 4 d) 6	
		5) What will be t	he output of the followi	ng PHP code?	
		\$state \$stath echo ( ?>	= array ("Karnataka", " a Pradesh"); array _ search ("Goa", s	Goa", "Maharashtra", \$state);	
		a) True c) False		b) 1 d) 2	
		6) What will be t php<br \$states ("popu "Maha "capita echo \$ ?>	he output of the followi s = array ("karnataka" = lation" => "11,35,000", rashtra" => array ("pop l" => "Mumbai")); states["karnataka"]["po	<pre>ng php code? =&gt; array "capital" =&gt; "Bangalore"), pulation"=&gt;"17,90,000", pulation"];</pre>	
		a) karnataka c) populatior	11,35,000 11,35,000	b) 11,35,000 d) karnataka population	

		<ul> <li>7) The practice of separating the user application through well-known inter</li> <li>a) Polymorphism</li> <li>c) Encapsulation</li> </ul>	rom the true inner workings of an faces is known as. b) Inheritance d) Abstraction	
		<ul> <li>8) Which of the following is/are a PHP <ol> <li>Notepad</li> <li>Notepad+ +</li> <li>Adobe Dreamweaver</li> <li>PDT</li> </ol> </li> </ul>	code editor?	
		c) i), ii) and iii)	d) Only iii)	
		<ul> <li>9) PHP files have a default file extension</li> <li>a) .html</li> <li>c) .php</li> </ul>	ons of b) .xml d) .ph	
		10)We can use to comment in i. /? ii. // iii. # iv. /**/ a) Only ii)	ohp? b) i), iii) and iv)	
	Ξ,	c) ii), iii) and iv)	d) Both ii) and iv)	• •
	в)	<ol> <li>The variable name is case – sensitive</li> <li>PHP is a client – side scripting lange</li> <li>The die () and exit () functions do the</li> <li>PHP can be run on Microsoft Window</li> </ol>	<i>ire True or Faise</i> /e in PHP. Jage. e exact same things. ws IIS (Internet Information Server)	04
Q.2	A)	<ul><li>Write short notes on the following.</li><li>1) Foreach statement</li><li>2) Cookies</li></ul>		08
	B)	<ul><li>Answer the following</li><li>1) Explain echo () and print () function</li><li>2) What is sticky form? Explain with ex</li></ul>	with example ample	06
Q.3	Ans a) b)	swer the following Explain different types of arrays with example. Write a PHP script to check how many times the webpage accessed by using cookies.		14
Q.4	Ans a) b)	<b>swer the following</b> Discuss any five file handling functions available in PHP. Assume a suitable structure of employee table having salary as a column and write a program in PHP to increase salary of employee by Rs.2,000		14
Q.5	Ans a)	swer the following. Explain following string functions with exa i) Strrev() ii) Str_repeat() iii) Str_pad() iv) Explode()	ample.	08
	b)	Explain use of session variable in state n	nanagement with example.	06

#### Q.6 Answer the following.

- a) What is a data validation? Explain server-side data validations.
- **b)** Write a PHP Script to display first 20 prime numbers.

#### Q.7 Answer the following.

- a) What is difference between Get and Post Method?
- **b)** Write PHP application to accept faculty details and insert it into faculty database (assume suitable table structure).

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Seat No.		Set	Ρ
	M.	C.A. (Semester - III) (Old) (CBCS) Examination Mar/Apr-2018 Science	
		SYSTEM SOFTWARE	
Time:	21⁄2	lours Max. Mark	ks: 70
Instru	ıctio	<ul> <li>ns: 1) Question No. 1 and 2 are compulsory.</li> <li>2) Attempt any 3 questions from Q. no. 3 to Q. no. 7.</li> <li>3) Figures to the right indicate full marks.</li> </ul>	
Q.1	A)	Choose correct alternatives.	10
		1) A macro processor isa) Machine dependantc) Syntax dependantd) Software dependant	
		<ul> <li>2) Bootstrap loader is loaded at the address</li> <li>a) 0</li> <li>b) 80</li> <li>c) Depends on machine</li> <li>d) None of the these</li> </ul>	
		<ul> <li>3) Loader that allows program relocation is</li> <li>a) Relocation loader</li> <li>b) Absolute loader</li> <li>c) Bootstrap Loader</li> <li>d) Linking Loader</li> </ul>	
		<ul> <li>4) Which of the following is not a type of assembler?</li> <li>a) One pass</li> <li>b) Two pass</li> <li>c) Three pass</li> <li>d) Load and go</li> </ul>	
		<ul> <li>5) The task of scanning the source statement, recognizing and classifying the various tokens, is known as</li> <li>a) Lexical analysis</li> <li>b) Syntax analysis</li> <li>c) Semantic analysis</li> <li>d) None of these</li> </ul>	
		<ul> <li>6) names symbols that are defined in this section but may be used by other control sections.</li> <li>a) EXTDEF</li> <li>b) EXTREF</li> <li>c) EXTERN</li> <li>d) None of these</li> </ul>	
		<ul> <li>7) The dynamic linking postpones linking function until time.</li> <li>a) Load</li> <li>b) Execution</li> <li>c) Compile</li> <li>d) None of these</li> </ul>	
		<ul> <li>8) This process, called syntactic analysis is performed by</li> <li>a) Parser</li> <li>b) Scanner</li> <li>c) Lexical analyser</li> <li>d) None of the these</li> </ul>	
		9) The main data structures involved in a one-pass macro processors are	
		a) DEFTAB b) NAMTAB c) ARGTAB d) All of these	
		<ul> <li>10)What are the activities are performed by pass-I of multi-pass assembler?</li> <li>a) Assign address to all the statements</li> <li>b) Saves addresses assigned to be used in Pass-2</li> <li>c) Defines the symbols in the symbol table</li> </ul>	

- c) Defines the symbols in the symbol table
- d) All of these

Γ

	B)	<ul> <li>State True or False.</li> <li>1) Macro processors are machine dependant.</li> <li>2) A Bootstrap loader is responsible for loading the operating system.</li> <li>3) SIC machines do not support floating point data format.</li> <li>4) UltraSparc are CISC machine.</li> </ul>	04
Q.2	A)	<ul><li>Write short notes on the following.</li><li>1) Absolute loader</li><li>2) Conditional macro expansion.</li></ul>	08
	B)	<ul><li>Answer the following.</li><li>1) Explain lexical analysis.</li><li>2) Explain program blocks.</li></ul>	06
Q.3	Ans A) B)	wer the following. Explain relocation and program linking in detail. What are machine independent compiler features?	08 06
Q.4	Ans A) B)	s <b>wer the following</b> Explain compiler design options in detail Explain different types of loader in detail.	08 06
Q.5	Ans A) B)	w <b>er the following.</b> Explain SIC and SIC/XE architecture in detail. Explain in brief basic macro processor function.	08 06
Q.6	Ans A) B)	w <b>er the following.</b> Explain machine dependant assembler features. What are macro processor design options?	08 06
Q.7	Ans A)	wer the following. What are the algorithm and data structures used for assembler? Explain in detail.	08
	B)	Explain UltraSPARC architecture for RISC machine.	06

No.		Set   F	)
	Μ	C.A. (Semester - III) (Old) (CBCS) Examination Mar/Apr-2018 Science DBMS	
Time	: 2½	ours Max. Marks: 7	0
Instr	uctic	<ul> <li>s: 1) Question No. 1 and 2 are compulsory.</li> <li>2) Attempt any 3 questions from Q. no. 3 to Q. no. 7</li> <li>3) Figures to the right indicate full marks.</li> </ul>	
Q.1	A)	Choose correct alternatives.1I) In a relational schema, each tuple is divided into fields called a) Relationsb) Domains d) All of the above	0
		<ul> <li>2) command can be used to modify a column in a table</li> <li>a) Alter</li> <li>b) Update</li> <li>c) Set</li> <li>d) Create</li> </ul>	
		<ul> <li>B) Grand and revoke are statements.</li> <li>a) DDL</li> <li>b) TCL</li> <li>c) DCL</li> <li>d) DML</li> </ul>	
		<ul> <li>4) The key to represent relationship between tables in called</li> <li>a) Primary key</li> <li>b) Secondary key</li> <li>c) Foreign key</li> <li>d) None of the above</li> </ul>	
		<ul> <li>A is used to define overall design of the database</li> <li>a) Schema</li> <li>b) Application program</li> <li>c) Data definition language</li> <li>d) Code</li> </ul>	
		<ul> <li>b) Data independence means</li> <li>a) Data is defined separately and not included in programs.</li> <li>b) Programs are not dependent on the physical attributes of data</li> <li>c) Programs are not dependent on the logical attributes of data</li> <li>d) Both B and C</li> </ul>	
		<ul> <li>7) The collection of information stored in a database at a particular moment is called as</li> <li>a) Schema</li> <li>b) Instance of the database</li> <li>c) Data domain</li> <li>d) Independence</li> </ul>	
		<ul> <li>a) TOTAL</li> <li>b) COUNT</li> <li>c) ADD</li> <li>d) SUM</li> </ul>	
		<ul> <li>A relational database developer refers to a record as</li> <li>a) A criteria</li> <li>b) A relation</li> <li>c) A tuple</li> <li>d) An attribute</li> </ul>	
		<ul> <li>is a full form of SQL.</li> <li>a) Standard query language</li> <li>b) Sequential query language</li> <li>c) Structured query language</li> <li>d) Server side query language</li> </ul>	

SLR-SQ-19 **C**\_1

### Seat

	В)	<ul> <li>State True or False.</li> <li>1) The number of tuples in a relation is called its cardinality.</li> <li>2) Data elements in the database can be modified by changing the data dictionary.</li> <li>3) The relational model feature is that there is much more data independence than some other database models.</li> <li>4) The non procedural language that requires a user to specify the data to be retrieved without specifying exactly how to get it is.</li> </ul>	04
Q.2	A)	<ul><li>Write short notes on the following.</li><li>a) Views</li><li>b) % ROW type</li></ul>	06
	B)	<ul><li>Answer the following.</li><li>a) What are strong and weak entities?</li><li>b) Explain ER model.</li></ul>	08
Q.3	Ans a) E b) E	wer the following Explain Generalization and Specialization with suitable example. Explain different types of data models.	07 07
Q.4	Ans a) V b) E	<b>wer the following</b> Vhat is cursor? Explain its types. Explain two phase commit protocol.	07 07
Q.5	Ans a) E b) E	<b>wer the following.</b> Explain log based recovery in details. Explain database architecture.	07 07
Q.6	Ans a) [ b) E	<b>wer the following.</b> Describe different DML commands with example. Explain different functions of DBMS.	07 07
Q.7	Ans a) E b) E	<b>wer the following.</b> Explain Boyce Codd's normal form with suitable example. Differentiate between primary key and unique constraint with example.	07 07

Seat No.		S	et	Ρ
	Μ.	C.A. (Semester - III) (Old) (CBCS) Examination Mar/Apr-2018 Science		
		JAVA PROGRAMMING		
Time: 2	21⁄2	Hours Max. Ma	arks	: 70
Instru	ctio	<ul> <li>ns: 1) Question No. 1 and 2 are compulsory.</li> <li>2) Attempt any 3 questions from Q. no. 3 to Q. no. 7</li> <li>3) Figures to the right indicate full marks.</li> </ul>		
Q.1	A)	<ul> <li>Choose correct alternatives.</li> <li>1) Which of the following is the feature of Java? <ul> <li>a) Robust</li> <li>b) Platform independent</li> <li>c) Multithreaded</li> <li>d) All of these</li> </ul> </li> </ul>		14
		<ul> <li>2) Which of the following is the component of JVM?</li> <li>a) Stack</li> <li>b) Registers</li> <li>c) Garbage collection heap</li> <li>d) All of these</li> </ul>		
		<ul> <li>3) Finalize () method is used to garbage collect an object</li> <li>a) True</li> <li>b) False</li> </ul>		
		<ul> <li>4) The this reference is used in conjunction with methods.</li> <li>a) Static</li> <li>b) Non-static</li> <li>c) Both a and b</li> <li>d) None of these</li> </ul>		
		<ul> <li>5) Any user-defined exception class is a subclass of the class.</li> <li>a) Exception b) SystemException</li> <li>c) ExceptionSystem d) UserException</li> </ul>		
		<ul> <li>6) is not the method available in the Thread class.</li> <li>a) Join()</li> <li>b) Alive()</li> <li>c) Sleep()</li> <li>d) Destroy()</li> </ul>		
		<ul> <li>7) package does define String and StringBuffer classes.</li> <li>a) java.lang</li> <li>b) java.IO</li> <li>c) java.mysql</li> <li>d) java.net</li> </ul>		
		<ul> <li>8) Which of the following is the highest class in the event-delegation mode</li> <li>a) java.util.EventListener</li> <li>b) java.util.EventObject</li> <li>c) java.awt.AWTEvent</li> <li>d) java.awt.event.AWTEvent</li> </ul>	el?	
		<ul><li>9) The drawImage() method of the Graphics class is used to draw an image on an applet.</li><li>a) True</li><li>b) False</li></ul>	je	
		10) method is used to register a keyboard event listener.a) KeyListener()b) addKistener()c) addKeyListener()d) eventKeyboardListener()		
		<ul><li>11)The prepared Statement object allows you to execute parameterized queries.</li><li>a) True</li><li>b) False</li></ul>		

SLR-SQ-20

		<ul> <li>12)The class is used to read charact</li> <li>a) FileReader</li> <li>c) ReadFile</li> </ul>	ters from the file b) ReaderFile d) FileRead		
		13)An interface is a pure abstract class. a) True	b) False		
		14)The suspend()method is used to termin a) True	nate a thread? b) False		
Q.2	A)	<ul><li>Write short notes on the following.</li><li>1) Differentiate between interface and an</li><li>2) Package &amp; its uses</li></ul>	abstract class.	08	
	B)	<ul><li>Answer the following.</li><li>1) Explain the use of final keyword with e</li><li>2) List the advantages of StringBuffer cla</li></ul>	xample ss.	06	
Q.3	Ans a) b)	<b>swer the following</b> Create a windows application to add a new What is polymorphism? Explain run-time pc	record using stored procedure. lymorphism.	14	
Q.4	Ans a) b)	<b>swer the following</b> Explain different methods used for Inter-thre Define Object class. Explain different metho	ead communication ods of Object class.	14	
Q.5	Ans a)	swer the following. What is the significance of Layout managers	s? Discuss briefly various layout	14	
Q.6	b) Ans a) b)	What is applet? Explain the steps involved i swer the following. Describe the need of thread synchronizatior Programming? Explain with a suitable progr Write a program to handle mouse events ar	n Applet development. n. How is it achieved in Java ram nd mouse motion events.	14	
Q.7	Ans a)	swer the following. What is stream? What is the difference betw streams? How are they used to capture inpu Explain with suitable example how to create interface.	veen byte streams and characters ut from the user? a new thread using the Runnable	14	
Time: 21/2 Hou	urs		Max. Marks: 7		
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Instructions:	1) Question No. 1 and 2 are compulsory. 2) Attempt any 3 questions from Q. no. 3 to Q. no. 7 3) Figures to the right indicate full marks.				
<b>Q.1 A) C</b> ł 1)	Noose correct alternatives. When 2 or more bits in a data unit has transmission, the error is called a) burst error c) inverted error	bee b) d)	1 en changed during the random error none of these		
2)	Error detection at the data link layer is a) Bit stuffing c) Hamming codes	ach b) d)	ieved by? Cyclic redundancy codes Equalization		
3)	If there are N routers from source to de in sending packet P(L->number of bits rate) a) N c) (2N*L)/R	estir in tl b) d)	hation, total end to end delay he packet R-> transmission (N*L)/R L/R		
4)	The resources needed for communicat reserved for the duration of session be a) Packet switching c) Line switching	ion twe b) d)	between end systems are en end systems in Frequency switching Circuit switching		
5)	The time taken by a packet to travel from to the client is called a) STT c) PTT	bm d b) d)	client to server and then back RTT None of the mentioned		
6)	FTP server listens for connection on po a) 20 c) 22	ort r b) d)	number 21 23		
7)	The file transfer protocol is built on a) data centric architecture c) client server architecture	b) d)	service oriented architecture none of the mentioned		
8)	DHCP is used for a) IPv6 c) Both (a) and (b)	b) d)	IPv4 None of the mentioned		
9)	The DHCP server can provide the a) dynamic allocation c) static allocation	b) d)	of the IP addresses. automatic allocation all of the mentioned		

		Eveningtion Mar/A
M.C.A. (Semester	(CBC2) (OIA)	Examination Mar/A
-	Science	

### **COMPUTER COMMUNICATION NETWORK**

Seat

No.

# pr-2018

70

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SLR-SQ-21

Set Ρ

	<ul> <li>10) What is the maximum number of IP addresses that can be assigned to hosts on a local subnet that uses the 255.255.255.224 subnet mask?</li> <li>a) 14</li> <li>b) 15</li> <li>c) 16</li> <li>d) 30</li> </ul>	
	<ul> <li>B) State True or False.</li> <li>1) Ethernet II type of Ethernet framing is used for TCP/IP and DEC net.</li> <li>2) Physical, data link and network layers are network support layers and session, presentation and application layers are user support layers.</li> <li>3) User datagram protocol is called connectionless because all TCP packets are treated independently by transport layer.</li> <li>4) The domain name system translates Internet domain and host names to IP address.</li> </ul>	04
Q.2	<ul> <li>A) Write short notes on the following.</li> <li>a) Interior Gateway Routing Protocol</li> <li>b) Architecture of Email</li> </ul>	08
	<ul> <li>B) Explain the following terms:</li> <li>a) Humming Code</li> <li>b) User agent message format</li> </ul>	06
Q.3	<ul><li>Answer the following</li><li>a) What is computer communication network? Explain uses for mobiles users.</li><li>b) Explain the term Home and wireless network with example.</li></ul>	07 07
Q.4	<ul> <li>Answer the following</li> <li>a) How many ways error controlled in data link layer? Explain one method with example.</li> <li>b) Explain simplex protocol for a Noisy channel with diagram and example.</li> </ul>	07 07
Q.5	<ul> <li>Answer the following.</li> <li>a) What are the design issues in Network Layer? Explain service provided to the Transport Layer.</li> <li>b) What are the functions of router in network layer? Explain distance vector routing algorithm with suitable example.</li> </ul>	07 07
Q.6	<ul> <li>Answer the following.</li> <li>a) How to prevent congestion in network layer? Explain the one method with example.</li> <li>b) Describe the Leaky bucket algorithm with diagram and example.</li> </ul>	07 07
Q.7	<ul> <li>Answer the following.</li> <li>a) What are the Elements of transport layers in computer network? Explain the any one elements in details</li> <li>b) Explain the architecture and services of electronic mail.</li> </ul>	07 07

	Μ	.C.	A. (Semester - III) (Old) (CBCS)	) Ex	amination Mar/Apr-2018	
				; D S	STATISTICS	
Time	: 2½	Но	urs		Max. Marks	: 70
Instr	uctio	ns	<ul> <li>1) Questions No.1 and 2 are Compute</li> <li>2) Attempt any three questions from (3) Figures to the right indicate full matrix</li> </ul>	sory Q.No Irks.	o.3 to Q.No.7	
Q.1	A)	<b>Se</b> 1) 2)	<ul> <li>elect most correct alternative:</li> <li>The sum of all observations divided by called as</li> <li>a) Mean</li> <li>c) Range</li> <li>If two sets do not have any common are called as</li> <li>a) Exclusive</li> </ul>	by to b) d) poin b)	tal number of observations is Variance Mode t between them, then the sets Exhaustive	05
		3)	<ul> <li>c) Simple</li> <li>Bernoulli random variable takes only</li> <li>a) One</li> <li>c) Three</li> </ul>	d)  	Complex value/ values. Two None of these	
		4)	If a r.v. X is symmetric about zero, th a) 1 c) 0.5	en tl b) d)	ne median of X is 0 None of these	
		5)	If $P(x)$ is a probability mass function, a) $P(x) \ge 0$ for all X c) Both a) and b)	the b) d)	$\sum_{x} P(x) = 1$ None of the above	
	B)	Fi 1) 2) 3)	II in the blanks: Mean of binomial distribution B(n,p) For distribution, mean is sam If X follows Poisson distribution with	is e as para	wariance. wariance. Then its variance is	05
		4) 5)	For a Binomial distribution with n=4 parameter p= The distribution is a particular number of trials is 1.	and r cas	the mean is 2, then its other se of binomial distribution when	
	<ul> <li>5) The distribution is a particular case of binomial distribution when number of trials is 1.</li> <li>C) State whether the following statements are true or false: <ol> <li>Negative binomial distribution is a particular case of binomial distribution.</li> <li>Range of the data is always non-negative.</li> <li>Correlation coefficient always lies in between 0 and 1.</li> <li>The mean of the data is always positive</li> </ol></li></ul>					

Seat

No.

# SLR-SQ-22

Set P

Q.2	A)	Answer the following:	06
		1) Define skewness and kurtosis	
	B)	<ul> <li>2) State Baye's theorem</li> <li>Write short notes on the following:</li> <li>1) Conditional Probability</li> <li>2) Correlation</li> </ul>	08
Q.3	A)	Define a random variable. Also describe Bernoulli and Binomial random variables.	07
	B)	Define geometric distribution. Also find its mean.	07
Q4	A)	Define probability density function (pdf). Also give pdf of exponential and normal random variables.	07
	B)	Find mean and variance of exponential distribution.	07
Q.5	A) B)	Describe the technique of obtaining random numbers from (0,1). Describe the concept of regression.	07 07
Q.6	A)	<ul> <li>Define the following:</li> <li>1) Sample space</li> <li>2) Exhaustive events</li> <li>3) Equally likely outcomes</li> </ul>	07
	B)	What do you mean by dispersion? Describe measures of dispersion.	07
Q.7	A) B)	State and explain addition and multiplication theorems of probability. Describe graphical representation of data.	07 07

ructior	IS:	<ol> <li>Question No. 1 and 2 are compulsory</li> <li>Attempt any 3 questions from Q. no. 3</li> <li>Figures to the right indicate full marks</li> </ol>	'. 3 to 3.	9 Q. no. 7
A)	<b>Ch</b> 1)	oose correct alternatives.Which of these exceptions will occur if w array beyond its length?a) ArithmeticExceptionc) ArrayArgumentException	ve t b) d)	try to access the index of an ArrayException IndexOutOfRangeException
	2)	Which of the following is a type of streama) Integer streamc) Bytes stream	m ii b) d)	n C#? Character stream Long stream
	3)	Which of the following keywords is used against the exception that is thrown by c a) Try I c) Throws	l by call b) d)	/ the calling function to guard ed function? Throw Catch
	4)	Which of the following is not a namespa Library? a) System.Process c) System.Threading	b) d)	in the .NET Framework Class System.Security Systgem.xml
	5)	<ul> <li>Which of the following are parts of the .N.</li> <li>1. The Common Language Runtime</li> <li>2. The Framework Class Libraries (Fig.</li> <li>3. Microsoft Published Web Services</li> <li>4. Applications deployed on IIS</li> <li>5. Mobile Applications</li> <li>a) Only 1, 2, 3</li> <li>b) Only 1, 2, 4</li> </ul>	NE (CL CL b) d)	T Framework? _R) ) Only 1, 2 Only 4, 5
	6)	Which of these is a method used to clear buffers? a) clear() l c) fflush()	ara b) d)	II the data present in output flush() close()
	7)	Which of the following is used to perform C#? a) Streams c) Classes	n a b) d)	II input & output operations in Variables Methods
	8)	Which of the following is not a namespa	ce	in the .NET Framework Class

- $(1) \cap$ . . . . . . . Inst
- .NET Max. Marks: 70

Time: 2<sup>1</sup>/<sub>2</sub> Hours

M.C.A. (Semester - IV) (New) (CBCS) Examination Mar/Apr-2018 Science

Seat

No.

Q.1

- SLR-SQ-23
  - Set Ρ

10

- Library? a) System.Process c) System.Threading
- b) System.Securityd) System.xml

		<ul> <li>9) What is the value of double constant 'E' defined in Math class?</li> <li>a) Approximately 3</li> <li>b) Approximately 3.14</li> <li>c) Approximately 2.72</li> <li>d) Approximately 0</li> </ul>	
		<ul> <li>10)What is the use of try &amp; catch?</li> <li>a) It is used to manually handle the exception</li> <li>b) It helps to fix the errors</li> <li>c) It prevents automatic terminating of the program in cases when an exception occurs</li> <li>d) All of the mentioned</li> </ul>	
	B)	<ol> <li>State True or False.</li> <li>Boolean is the data type return in IsPostback property.</li> <li>Load is first method that is fired during the page load.</li> <li>JAVASCRIPT is default scripting language in ASP.</li> <li>Text is a property common to every validation control.</li> </ol>	04
Q.2	A)	<ul><li>Write short notes on the following.</li><li>1) Exception Handling</li><li>2) Cross page posting</li></ul>	08
	B)	<ul><li>Answer the following.</li><li>1) What is use of validation groups? Explain in detail.</li><li>2) What is the use of AutoPostBack properties explain with example?</li></ul>	06
Q.3	Ans a) b)	wer the following. What is namespace? Explain how to create namespace with example. Design a windows application and write code to inserts a student record.	14
Q.4	Ans a) b)	<b>wer the following.</b> Explain components of .NET Framework. What is inheritance? Explain with example.	14
Q.5	Ans a) b)	wer the following. What is master page? Write stepwise process of creating master page. Explain App-Global Resources and App-Local Resources with example.	14
Q.6	Ans a) b)	<b>wer the following.</b> What is preprocessor? Describe different preprocessors in C#. Differentiate in between ASP and ASP.NET	14
Q.7	Ans a) b)	<b>wer the following.</b> What is State management? Explain Cookies in ASP.NET? What is validation? Explain Compare Validator, RegularExpression	14

Validator.

	DATA MINING AND WA	AREHOUSE
Time: 2½ Ho	urs	Max. Marks: 70
Instructions	<ul> <li>1) Question No. 1 and 2 are compulsor</li> <li>2) Attempt any 3 questions from Q. no.</li> <li>3) Figures to the right indicate full mark</li> </ul>	y. 3 to Q. no. 7 s.
<b>Q.1 A) C</b>	hoose correct alternatives. <ul> <li>An system typically adopts e</li> <li>a) OLAP</li> <li>c) OLEP</li> </ul>	10 ither a star or a snowflake model. b) OLTP d) None of these
2)	<ul> <li>A is a set of views over opera</li> <li>a) Data mart</li> <li>c) Enterprise warehouse</li> </ul>	tional databases. b) Virtual warehouse d) None of these
3)	<ul> <li>, which converts data from legacy format.</li> <li>a) Data extraction</li> <li>c) Data Transformation</li> </ul>	y or host format to warehouse b) Data cleaning d) Refresh
4)	<ul> <li>This kind of schema can be viewed as called a galaxy schema.</li> <li>a) Fact constellation</li> <li>c) Star</li> </ul>	a collection of stars, and hence is b) Snowflake d) None of these
5)	<ul> <li> is a visualization operation that provide an alternative data presentation</li> <li>a) Slice</li> <li>c) Rotate</li> <li>b) The process of finding a model that design of the process of finding a model that design of the process of the proces of the proces of the process of the proces of the process of th</li></ul>	rotates the data axes in view to n. b) Dice d) Pivote scribes and distinguishes data
0)	<ul><li>classes or concepts.</li><li>a) Data Characterization</li><li>c) Data Discrimination</li></ul>	<ul><li>b) Data Classification</li><li>d) Data Selection</li></ul>
7)	<ul> <li>The full form of OLAP is</li> <li>a) Online Analytical Processing</li> <li>c) Online Advanced Preparation</li> </ul>	<ul><li>b) Online Advanced Processing</li><li>d) Online Analytical Performance</li></ul>
8)	<ul> <li>The type of relationship in star schema</li> <li>a) Many to many</li> <li>c) One to many</li> </ul>	is b) One to one d) Many to one
9)	<ul> <li>defines the structure of the data and used by operational applications.</li> <li>a) User-level metadata</li> <li>c) Operational metadata</li> </ul>	a held in operational databases b) Data warehouse metadata d) Data mining metadata
10	<ul> <li>D)Classification rules are extracted from _</li> <li>a) Root node</li> <li>c) Siblings</li> </ul>	b) Decision tree d) Branches

# M.C.A. (Semester - IV) (New) (CBCS) Examination Mar/Apr-2018 Science

Seat No.

SLR-SQ-24

Set

Ρ

Page 1 of 2

	В)	<ul> <li>State True or False.</li> <li>1) The kind of knowledge to be mined specifies the data mining functions to be performed, such as characterization, association, classification, clustering or revolution analysis.</li> <li>2) An OLTP system typically adopts either a star or a snowflake model.</li> <li>3) A centroid-based partitioning technique uses the centroid of a cluster, C<sub>i</sub>, to represent that cluster.</li> <li>4) An agglomerative hierarchical clustering method uses a top-down strategy.</li> </ul>	04
Q.2	A)	<ul><li>Write short notes on the following.</li><li>a) Slice and dice operation</li><li>b) Data transformation</li></ul>	08
	B)	<ul> <li>Answer the following.</li> <li>a) Explain divisive hierarchical clustering method with example</li> <li>b) What is noise? Explain the binning technique in short.</li> </ul>	06
Q.3	Ans a) b)	swer the following What is Data warehouse? Explain the architecture of data warehouse. Explain various OLAP operations.	14
Q.4	Ans a) b)	swer the following What is association rule? How associations rules generated in single dimensional Databases? Explain with example. State and explain data mining primitives with suitable example.	14
Q.5	Ans a) b)	swer the following. Explain the procedure of Back propagation method in detail. State and explain the steps in k-means algorithm.	14
Q.6	Ans a) b)	swer the following. What is classification? Explain the steps in decision tree induction method. Explain various new trends in data mining.	14
Q.7	Ans a) b)	swer the following. What is Cluster analysis? Explain Density-based clustering method with example. Explain the features of data mining query language.	14

M.C.A. (Semester - IV) (New) (CBCS) Examination Mar/Apr-2018 Science UML

Time: 2<sup>1</sup>/<sub>2</sub> Hours

Seat

No.

**Instructions:** 1) Question No. 1 and 2 are compulsory.

- 2) Attempt any 3 questions from Q. no. 3 to Q. no. 7.
- 3) Figures to the right indicate full marks.

#### Q.1 Choose correct alternatives. A)

- 1) An object symbol is divided into what parts?
  - a) Top compartment b) Bottom compartment
  - c) All of the above d) None of the above
- Which among these are the rules to be considered to form class diagram?
  - a) Class symbols must have at least a name compartment.
  - b) Compartment can be in a random order
  - c) Attributes and operations can be listed at any suitable place
  - d) None of the above.
- 3) Which of the following states about concurrent region?
  - a) It is concurrent composite state contain two or more concurrent state diagrams separated by dashed lines.
  - b) The concurrent state diagrams specify finite automata that execute in parallel
  - c) All of the above
  - d) None of the above
- 4) What does a deployment diagram consists of?
  - a) Computational resource
  - b) Communication path between resource.
  - c) Artifacts that execute resource.
  - d) All of the above.

a) Icons

- 5) Which of the following is not element of UML diagram notation?
  - b) Vertex
  - c) String d) None of the above
- 6) Abstraction is classified into types.
  - a) 4 b) 3 d) 1 c) 2
- 7) Which of these are parts of class operation specification format?
  - b) Parameter List a) Name
  - d) All of the above c) Return type list
- 8) An attribute is a data item held by which of following?
  - a) Class b) Object d) None of the above
  - c) All of the above
- 9) Which of the following are composite states?
  - a) A sequential Composite state
  - c) All of the above

- b) A concurrent Composite state
- d) None of the above

10

Set

Max. Marks: 70

		<ul> <li>10)Which among the following are not the valid notations for package &amp; component diagram?</li> <li>a) Notes</li> <li>b) Box</li> <li>c) Extension mechanisms</li> <li>d) Packages</li> </ul>						
	B)	<ol> <li>State True or False.</li> <li>A node is a computational resource.</li> <li>A property is a characteristic of the entity designated by a model element.</li> <li>A stereotype is a UML model element given more specific meaning.</li> <li>Use case can last for more than one session.</li> </ol>	04					
Q.2	A)	<ul><li>Write short notes on the following.</li><li>1) Activity diagrams.</li><li>2) Relationships in structural modeling.</li></ul>	80					
	B)	Explain the following terms. <ol> <li>State Machines</li> <li>Priority call back Mechanism.</li> </ol>	06					
Q.3	An a) b)	<ul> <li>Answer the following.</li> <li>a) What is UML? Explain conceptual model of UML.</li> <li>b) Explain the difference between interaction diagram and collaboration diagram.</li> </ul>						
Q.4	An a) b)	<b>swer the following.</b> What is a package? How it is represented in UML? Describe importing and exporting of packages. Draw the use case diagram for online digital library system.	14					
Q.5	<ul> <li>Answer the following.</li> <li>a) Explain various notations used in UML.</li> <li>b) What are the modeling techniques for component diagram?</li> </ul>							
Q.6	An a) b)	<b>swer the following.</b> Explain object oriented design methodology with Grady Booch's approach. Explain in detail in common mechanism used in structural modeling.	14					
Q.7	An a)	swer the following. Describe the various steps in constructing object model?	14					

**b)** Explain the terms and concepts used in deployment diagram?

						SLR-SQ-26
Seat No.						Set P
	М.	C.A	. (Semester -	IV) (New) (CBCS Science FINITE AUTO	) Exa	amination Mar/Apr-2018
Time:	21⁄2	Hou	rs			Max. Marks: 70
Instru	ictio	ns:	<ol> <li>1) Question No.</li> <li>2) Attempt any 3</li> <li>3) Figures to the</li> </ol>	1 and 2 are compuls 3 questions from Q. n e right indicate full ma	ory. o. 3 ti irks.	o Q. no. 7
Q.1	A)	Ch	oose correct al	ternatives.	Auto	10
		1)	a) 5 c) 7		b) d)	6 None of the above
		2)	Regular languages a) Intersection c) Difference	ges are closed under	b) d)	Homomorphism All of the these
		3)	Number of state with ab over {a,	es in finite automata th b} is	nat wi h)	ill accept all the strings ending
			c) 4		d)	5
		4)	The machine th a) PDA c) NFA	at uses stack as men	nory is b) d)	s DFA Turing Machine
		5)	Which of the fol a) $L = \{a^m b^m c c, L = \{a^n b^n   m c \}$	lowing language is no $m^m   m \ge 1$ $m^n \ge 1$	ot con b) d)	text free? $L = \{a^m b^n c^{m+n}   n, m \ge 1\}$ None of the above
		6)	According to Ch automata is a) Regular c) Context free	nomsky hierarchy the	langu b) d)	age accepted by finite Non-regular None of the above
		7)	lf L1 and L2 are a) Regular c) Context Free	e regular then L1-L2 is e	s b) d)	Non Regular None of the above
		8)	Regular express exactly two 0's o a) 1*0 1*0 1 c) 0 (0+1) *	sion for a language ac over {0,1} is	ccept – b) d)	ing all the strings having 00 (0+1) <sup>*</sup> 0 1 <sup>*</sup> 0
		9)	In Push Down A a) Set of stack c) Set of states	Automata Γ represents symbols s	s b) d)	Set of input alphabet None of the above
		10	)The Chomsky N	lormal form converts	the p	arser tree of the grammar into
			a) Binary tree		b)	AVL tree

d) None of the above

	B)	<ol> <li>State True or False.</li> <li>Type 0 languages are context free languages.</li> <li>In Greibach Normal Form there is single terminal in the right hand side of the production rule.</li> <li>Regular languages are also accepted by Turing machine.</li> <li>Regular languages are not closed under Kleeneclosure.</li> </ol>						
Q.2	A)	<ul> <li>Write short notes on the following.</li> <li>a) What is GNF? Explain with example</li> <li>b) Explain Context Free Languages Regular Languages.</li> </ul>						
	B)	Write a shore a) Determin b) Derivation	r <b>t note on</b> istic Push Do n tree or pars	own Automata ser tree.	Э.			06
Q.3	a)	What is leftmo leftmost and ri grammar G (E	st and rightm ghtmost deriv , {id, +,*), P,I	ost derivation vation and als E) where P is	n? Produce so construct given by	the string "id parser tree f	+id*id" using or following	08
	b)	Construct $\varepsilon$ -NF (01 + 10) <sup>*</sup> + 1	Construct $\varepsilon$ -NFA for following regular expression. <b>0</b> (01 + 10) $^{*}$ + 1. 1 $^{*}$					
Q.4	a) b)	Construct PDA Explain closure	A for following e properties o	g language L= of regular lan	={wcw <sup>R</sup>   w <del>(</del> guages.	€ {a, b}*}		08 06
Q.5	a)	Construct DFA	equivalent t	o following D	FA.			08
• -				0	1	2		
			→q0	{q1, q4}	q4	{q2,q3}		
			q1	Ø	q4	Ø		
			q2	Ø	Ø	{q2, q3}		
			q3	Ø	q4	Ø		
			*q4	Ø	Ø	Ø		
	b)	What is ambig ambiguous or ambiguity from S→ iCtS  i C→b	uous gramm not to genera n following gra CtSeS   a	ar? Check wh ate the string ammar.	nether follov "ibtiaea", if f	ving gramma ound remove	r is e the	06
Q.6	a)	Construct Turi L = $\{a^n b^n\}$	ng machine f $ n \ge 1$ }	or following la	anguage.			08
	b)	Construct DFA L1=Set of L2=Set of	for $L = L1$ (all strings of all strings state	) L2 over {a, b even length arting with b	o} where,			06
Q.7	a)	Convert follow $S \rightarrow BBB \mid A$ $A \rightarrow \varepsilon$ $B \rightarrow bB \mid A$	ing grammar A	into CNF.				08
	b)	Prove that the	language L =	$= \{a^n b^{n+1}   n\}$	$\geq 1$ } is not	regular.		06

Seat No.					Set	Ρ
	Μ.	C.A. (Semeste	er - IV) (New) (CBCS) Science	) Ex	amination Mar/Apr-2018	
			<b>Distributed Operati</b>	ng S	System	
Time:	21⁄2	Hours			Max. Marks	s: 70
Instru	uctio	ns: 1) Question N 2) Attempt ar 3) Figures to	No. 1 and 2 are compulsony 3 questions from Q. no the right indicate full ma	ory. o. 3 t rks.	o Q. no. 7	
Q.1	A)	<ul> <li>Choose correct</li> <li>1) In the token pring structure</li> <li>a) Logically</li> <li>c) Both a and</li> <li>2) If timestamp</li> </ul>	t <b>alternatives.</b> passing of distributed sys a. nd b of two events are same t	b) d) then	, processes are organized in a Physically None of the above the events are	10
		<ul><li>a) Concurre</li><li>c) monotoni</li></ul>	nt c	b) d)	non-concurrent blocked	
		<ul> <li>3) If one site fai</li> <li>a) All the site</li> <li>b) The remains</li> <li>c) Directly control</li> <li>d) All of the</li> </ul>	Is in distributed system e will stop working hining sites can continue onnected site will stop w above	oper orkin	ating g	
		<ul> <li>4) of machines of a) Client</li> <li>c) Storage c</li> </ul>	the distributed file system distributed system. devices	m are b) d)	e dispersed among various Server All of the above	
		5) is a) File replic c) Client inte	not possible in distribute ation erface	d file b) d)	e system. Migration Remote access	
		<ul><li>6) Network ope</li><li>a) Server</li><li>c) Both (a) a</li></ul>	rating system runs on and (b)	b) d)	Every system in the server None of the above	
		<ul> <li>7) RPC provide remote proce</li> <li>a) Stub</li> <li>c) Name</li> </ul>	s (an) on the edure.	e clier b) d)	nt side, a separate one for each Identifier Process identifier	
		<ul><li>8) In a distribute</li><li>a) Polling</li><li>c) Token pa</li></ul>	ed system, link and site f	ailure b) d)	e is detected by Handshaking Socket	
		<ul><li>9) Mutual exclusion</li><li>a) Mutex loc</li><li>c) Both(a) a</li></ul>	sion can be provided by ks nd (b)	the _ b) d)	Binary semaphore None of the above	
		10)Logical exter a) System r	nsion of computational m migration	igrati b)	ion is Process migration	

- b) Process migration
- d) Data migration

	B)	State True or False. <ol> <li>According to the ring algorithm, links between processes are</li> </ol>	04
		<ul> <li>unidirectional</li> <li>A collection of instruction that perform a single logical function is called transaction.</li> <li>Data replication is favored where most process requests are read-only and where the data are relatively static.</li> <li>Remote procedure calls are used for communication between two processes on separate machine.</li> </ul>	
Q.2	A)	<ul><li>Write short notes on the following.</li><li>1) File Replication</li><li>2) Message switching</li></ul>	08
	B)	<ul><li>Answer the following.</li><li>1) Explain domain name system</li><li>2) What is virtual memory?</li></ul>	06
Q.3	Ans a) b)	swer the following Which are the different techniques to avoid deadlock in distributed operating system? Discuss the communication protocol used in RPC.	07 07
Q.4	Ans a) b)	<b>swer the following</b> Explain client-server model in detail Explain clock synchronization in detail.	07 07
Q.5	Ans a) b)	<b>swer the following.</b> Discuss massage forwarding mechanism in process migration Why do we use election algorithm. Explain Bully algorithm.	07 07
Q.6	Ans a)	swer the following. Describe distributed approach for implementing mutual exclusion in distributed system.	07
Q.7	Ans a)	system?	07
	b)	Explain resource sharing in distribute environment.	07

M.C.A. (Semester - IV) (New) (CBCS) Examination Mar/Apr-2018 Science COMPUTER GRAPHICS         Time: 2½ Hours       Max. Marks: 70         Instructions: 1) Question No. 1 and 2 are compulsory. 2) Attempt any 3 questions from Q. no. 3 to Q. no. 7 3) Figures to the right indicate full marks.       Max. Marks: 70         Q.1 A)       Choose correct alternatives. 1) Each screen point is referred to as a) Resolution b) Pixel c) Persistence       10	Seat No.							Set	Ρ
COMPUTER GRAPHICS         Time: 2½ Hours       Max. Marks: 70         Instructions: 1) Question No. 1 and 2 are compulsory.       Attempt any 3 questions from Q. no. 3 to Q. no. 7         2) Attempt any 3 questions from Q. no. 3 to Q. no. 7       Figures to the right indicate full marks.         Q.1 A)       Choose correct alternatives.       10         1)       Each screen point is referred to as       a) Resolution       b) Pixel         c)       Persistence       d) Dot Pitch	I	M.C	<b>.</b> .A	. (Semester	- IV) (New) S	(CBCS) E Science	Exa	amination Mar/Apr-2018	
Time: 2½ HoursMax. Marks: 70Instructions: 1) Question No. 1 and 2 are compulsory. 2) Attempt any 3 questions from Q. no. 3 to Q. no. 7 3) Figures to the right indicate full marks.Max. Marks: 70Q.1 A) Choose correct alternatives. 1) Each screen point is referred to as a) Resolution c) Persistence10District b) Pixel d) Dot PitchDistrict b) Pixel d) Dot Pitch					COMPUT	ER GRAI	PH	ICS	
Instructions: 1) Question No. 1 and 2 are compulsory.         2) Attempt any 3 questions from Q. no. 3 to Q. no. 7         3) Figures to the right indicate full marks.         Q.1 A) Choose correct alternatives.         1) Each screen point is referred to as         a) Resolution       b) Pixel         c) Persistence       d) Dot Pitch	Time: 2	2½ I	Ηοι	irs				Max. Marks	s: 70
Q.1 A)       Choose correct alternatives.       10         1)       Each screen point is referred to as       a)       Resolution       b)       Pixel       c)       Persistence       d)       Dot Pitch       10	Instrue	ctio	ns:	<ol> <li>Question N</li> <li>Attempt an</li> <li>Figures to</li> </ol>	lo. 1 and 2 are by 3 questions the right indica	e compulsor from Q. no. ate full mark	'y. 3 t ks.	o Q. no. 7	
<ol> <li>Each screen point is referred to as</li> <li>a) Resolution</li> <li>b) Pixel</li> <li>c) Persistence</li> <li>d) Dot Pitch</li> </ol>	Q.1	A)	Ch	oose correct	alternatives.				10
-,			1)	Each screen a) Resolution c) Persisten	point is referre n ce	ed to as	b) d)	 Pixel Dot Pitch	
2) is the number of points per centimeter that can be plotted			2)	ist	the number of	points per d	cen <sup>-</sup>	timeter that can be plotted	
horizontally and vertically.			_,	horizontally a	nd vertically.	pointe poi			
a) Aspect Ratio b) Pixel Depth d) Det Bitch				a) Aspect Ra	atio		b)	Pixel Depth	
2) The purpose of refreshing a CPT is			2)		I of rofroching o		u)		
a) To avoid flickering by the billion of the billio			3)	a) To avoid f	lickering		b)	 To maintain steady picture	
c) To avoid fading of pixels d) All of these				c) To avoid f	ading of pixels	6	d)	All of these	
4) Identify the odd one out.			4)	Identify the o	dd one out.				
a) Mouse b) Keyboard c) Trackball d) Space ball				a) Mouse			b)	Keyboard Space ball	
5) The refresh rate below which a picture flicker is			5)	The refresh r	ate helow whic	h a nicture	u) flic	ker is	
a) 25 b) 30			5)	a) 25			b)	30	
c) 35 d) 60				c) 35			d)	60	
6) The transformation in which an object is moved in a minimum distance			6)	The transform	nation in which	n an object i	is m	noved in a minimum distance	
a) Rotation and the static and the scalled				a) Rotation	e position to ar	nother is ca	lled b)	Replacement	
c) Translation d) Scaling				c) Translatio	n		d)	Scaling	
7) In graphics applications, a rectangular area in which text or graphics			7)	In graphics a	pplications, a r	ectangular	are	a in which text or graphics	
can appear is known as				can appear is	s known as	•	<b>հ</b> )	Ellipso	
c) Frame d) Box				c) Frame			b) d)	Box	
8) PHIGS stands for .			8)	PHIGS stand	s for		,		
a) Parallel Hierarchical Interactive Graphics Standard			,	a) Parallel H	ierarchical Inte	eractive Gra	aphi	ics Standard	
<ul> <li>b) Programmers Hierarchical Interactive Graphics Standard</li> <li>c) Plain Hierarchical Interactive Graphics Software</li> </ul>				b) Programn	ners Hierarchic archical Intera	ctive Graph	ve ( vics	Graphics Standard	
d) Programmers High Internal Graphics Standard				d) Programn	ners High Inter	nal Graphic	cs S	Standard	
9) The display area of the part selected or the form in which the selected			9)	The display a	rea of the part	selected o	r th	e form in which the selected	
part is viewed is known as				part is viewed	d is known as _			View port	
c) Resolution d) DDA				<ul><li>c) Resolution</li></ul>	า		(a (b	DDA	

		<ul> <li>10)Which of the following are the steps involved in 3D transformation?</li> <li>i. Modeling Transformation</li> <li>ii. Viewing Transformation</li> <li>iii. Projection Transformation</li> <li>iv. Workstation Transformation</li> <li>a) Only i) and ii)</li> <li>b) Only iii) and iv)</li> <li>c) Only i) and iii)</li> <li>d) All i), ii) iii) and iv)</li> </ul>	
	B)	<ol> <li>State whether True or False.</li> <li>The Raster scan system is a scanning technique in which the electrons sweep from top to bottom and from left to right.</li> <li>The shearing transformation actually slants the object along the X direction or the Y direction as required.</li> <li>The projection transforms 3D objects into a 2D projection plane.</li> <li>Coordinates of window are known as Cartesian coordinates.</li> </ol>	04
Q.2	A)	<ul> <li>Write short notes on the following.</li> <li>1) Raster Scan Display</li> <li>2) Point and line clipping</li> </ul>	08
	B)	<ul><li>Answer the following.</li><li>1) Describe working of any one input device.</li><li>2) What is view port?</li></ul>	06
Q.3	An a) b)	<b>swer the following.</b> Explain DDA line generation algorithm. What is projection? Explain in detail.	14
Q.4	An a) b)	<b>swer the following.</b> Describe Sutherland Hodgmen polygon clipping procedure. Describe various applications of computer graphics.	14
Q.5	An a) b)	<b>swer the following.</b> Distinguish between random scan display and raster scan display. What are the steps involved in 3D transformation?	14
Q.6	An a) b)	swer the following. Explain the concept of segments and segment table in computer graphics. Explain line and area fill attributes of output primitives.	14
Q.7	An a)	swer the following. Describe the midpoint method for line generation.	14

**b)** Explain Cohen Sutherland line clipping procedure.

Instr	uctio	ons:	<ul> <li>1) Question No. 1 and 2 are comp</li> <li>2) Attempt any 3 questions from 3) Figures to the right indicate full</li> </ul>	oulsory. Q. no. 3 to Q. no. 7 I marks.
Q.1	A)	<b>Cł</b> 1)	<ul> <li>Noose correct alternatives.</li> <li>Which of these exceptions will oc array beyond its length?</li> <li>a) ArithmeticException</li> <li>c) ArrayArgumentException</li> </ul>	cur if we try to access the index of an b) ArrayException d) IndexOutOfRangeException
		2)	Which of the following is a type o a) Integer stream c) Bytes stream	f stream in C#? b) Character stream d) Long stream
		3)	Which of the following keywords against the exception that is throw a) Try c) Throws	is used by the calling function to guard wn by called function? b) Throw d) Catch
		4)	Which of the following is not a na Library? a) System.Process c) System.Threading	mespace in the .NET Framework Class b) System.Security d) Systgem.xml
		5)	<ul> <li>Which of the following are parts of</li> <li>1. The Common Language Ru</li> <li>2. The Framework Class Libra</li> <li>3. Microsoft Published Web Sof</li> <li>4. Applications deployed on IIS</li> <li>5. Mobile Applications</li> <li>a) Only 1, 2, 3</li> <li>c) Only 1, 2, 4</li> </ul>	of the .NET Framework? Intime (CLR) Iries (FCL) Prvices S b) Only 1, 2 d) Only 4, 5
		6)	Which of these is a method used buffers? a) clear() c) fflush()	<ul><li>to clear all the data present in output</li><li>b) flush()</li><li>d) close()</li></ul>
		7)	Which of the following is used to C#? a) Streams c) Classes	perform all input & output operations in b) Variables d) Methods
		8)	Which of the following is not a na	mespace in the .NET Framework Class

Time: 21/2 Hours Inst

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- - Library? a) System.Process c) System.Threading
- b) System.Securityd) System.xml

Max. Marks: 70

10

Science .NET

		<ul> <li>9) What is the value of double constant 'E' defined in Math class?</li> <li>a) Approximately 3</li> <li>b) Approximately 3.14</li> <li>c) Approximately 2.72</li> <li>d) Approximately 0</li> </ul>	
		<ul> <li>10)What is the use of try &amp; catch?</li> <li>a) It is used to manually handle the exception</li> <li>b) It helps to fix the errors</li> <li>c) It prevents automatic terminating of the program in cases when an exception occurs</li> <li>d) All of the mentioned</li> </ul>	
	B)	<ol> <li>State True or False.</li> <li>Boolean is the data type return in IsPostback property.</li> <li>Load is first method that is fired during the page load.</li> <li>JAVASCRIPT is default scripting language in ASP.</li> <li>Text is a property common to every validation control.</li> </ol>	04
Q.2	A)	<ul><li>Write short notes on the following.</li><li>1) Exception Handling</li><li>2) Cross page posting</li></ul>	08
	B)	<ul><li>Answer the following.</li><li>1) What is use of validation groups? Explain in detail.</li><li>2) What is the use of AutoPostBack properties explain with example?</li></ul>	06
Q.3	Ans a) b)	wer the following. What is namespace? Explain how to create namespace with example. Design a windows application and write code to inserts a student record.	14
Q.4	Ans a) b)	<b>wer the following.</b> Explain components of .NET Framework. What is inheritance? Explain with example.	14
Q.5	Ans a) b)	wer the following. What is master page? Write stepwise process of creating master page. Explain App-Global Resources and App-Local Resources with example.	14
Q.6	Ans a) b)	<b>wer the following.</b> What is preprocessor? Describe different preprocessors in C#. Differentiate in between ASP and ASP.NET	14
Q.7	Ans a) b)	<b>wer the following.</b> What is State management? Explain Cookies in ASP.NET? What is validation? Explain Compare Validator, RegularExpression	14

Validator.

			DATA MINING AND	VAREHO	USE		
Time	: 2½	Ηοι	urs		Max. Marks	: 70	
Instr	uctic	ons:	<ul> <li>1) Question No. 1 and 2 are compute</li> <li>2) Attempt any 3 questions from Q. r</li> <li>3) Figures to the right indicate full matrix</li> </ul>	ory. o. 3 to Q. n rks.	o. 7		
Q.1	A)	Cł	oose correct alternatives.				
		1)	An system typically adopt a) OLAP c) OLEP	either a st b) OLTI d) None	ar or a snowflake model. > e of these		
		2)	<ul> <li>A is a set of views over ope</li> <li>a) Data mart</li> <li>c) Enterprise warehouse</li> </ul>	rational dat b) Virtua d) None	tabases. al warehouse e of these		
		3)	, which converts data from leg	icy or host	format to warehouse		
			a) Data extraction c) Data Transformation	b) Data d) Refre	cleaning esh		
		4)	This kind of schema can be viewed a called a galaxy schema	s a collecti	on of stars, and hence is		
			<ul><li>a) Fact constellation</li><li>c) Star</li></ul>	b) Snov d) None	vflake e of these		
		5)	is a visualization operation t provide an alternative data presenta	at rotates t on.	he data axes in view to		
			a) Slice c) Rotate	b) Dice d) Pivot	e		
		6)	The process of finding a model that classes or concepts.	escribes a	nd distinguishes data		
			<ul><li>a) Data Characterization</li><li>c) Data Discrimination</li></ul>	b) Data d) Data	Classification Selection		
		7)	The full form of OLAP is a) Online Analytical Processing c) Online Advanced Preparation	b) Onlir d) Onlir	e Advanced Processing Analytical Performance		
		8)	The type of relationship in star scher a) Many to many c) One to many	a is b) One d) Many	to one / to one		
		9)	defines the structure of the c and used by operational applications	ata held in	operational databases		
			c) Operational metadata	d) Data	mining metadata		
		10	<ul> <li>a) Root node</li> </ul>	b) Decis	sion tree		
			c) Sidiings	a) Bran	cnes		

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	B)	<ul> <li>State True or False.</li> <li>1) The kind of knowledge to be mined specifies the data mining functions to be performed, such as characterization, association, classification.</li> </ul>	04
		<ul> <li>a) An OLTP system typically adopts either a star or a snowflake model.</li> <li>3) A centroid-based partitioning technique uses the centroid of a cluster, C<sub>i</sub>, to represent that cluster.</li> <li>4) An agglomerative hierarchical clustering method uses a top-down strategy.</li> </ul>	
Q.2	A)	<ul><li>Write short notes on the following.</li><li>a) Slice and dice operation</li><li>b) Data transformation</li></ul>	08
	B)	<ul> <li>Answer the following.</li> <li>a) Explain divisive hierarchical clustering method with example</li> <li>b) What is noise? Explain the binning technique in short.</li> </ul>	06
Q.3	Ans a) b)	swer the following What is Data warehouse? Explain the architecture of data warehouse. Explain various OLAP operations.	14
Q.4	Ans a)	swer the following What is association rule? How associations rules generated in single dimensional Databases? Explain with example.	14
Q.5	Ans a) b)	State and explain data mining primitives with suitable example. Swer the following. Explain the procedure of Back propagation method in detail. State and explain the steps in k-means algorithm.	14
Q.6	Ans a) b)	swer the following. What is classification? Explain the steps in decision tree induction method. Explain various new trends in data mining.	14
Q.7	Ans a)	wer the following. What is Cluster analysis? Explain Density-based clustering method with example.	14
	b)	Explain the features of data mining query language.	

Set

Max. Marks: 70

### M.C.A. (Semester - IV) (Old) (CBCS) Examination Mar/Apr-2018 Science UML

Time: 2<sup>1</sup>/<sub>2</sub> Hours

Seat

No.

**Instructions:** 1) Question No. 1 and 2 are compulsory.

- 2) Attempt any 3 questions from Q. no. 3 to Q. no. 7.
- 3) Figures to the right indicate full marks.

#### Q.1 Choose correct alternatives. A)

- 1) An object symbol is divided into what parts?
  - a) Top compartment b) Bottom compartment
  - c) All of the above d) None of the above
- Which among these are the rules to be considered to form class diagram?
  - a) Class symbols must have at least a name compartment.
  - b) Compartment can be in a random order
  - c) Attributes and operations can be listen at any suitable place
  - d) None of the above.
- 3) Which of the following states about concurrent region?
  - a) It is concurrent composite state contain two or more concurrent state diagrams separated by dashed lines.
  - b) The concurrent state diagrams specify finite automata that execute in parallel
  - c) All of the above
  - d) None of the above
- 4) What does a deployment diagram consists of?
  - a) Computational resource
  - b) Communication path between resource.
  - c) Artifacts that execute resource.
  - d) All of the above.

a) Icons

- 5) Which of the following is not element of UML diagram notation?
  - b) Vertex
  - c) String d) None of the above
- 6) Abstraction is classified into types.
  - a) 4 b) 3 d) 1 c) 2
- 7) Which of these are parts of class operation specification format?
  - b) Parameter List a) Name
  - d) All of the above c) Return type list
- 8) An attribute is a data item held by which of following?
  - a) Class b) Object d) None of the above
  - c) All of the above
- 9) Which of the following are composite states?
  - a) A sequential Composite state
  - c) All of the above

- b) A concurrent Composite state
- d) None of the above

10

		<ul> <li>10)Which among the following are not the valid notations for package &amp; component diagram?</li> <li>a) Notes</li> <li>b) Box</li> <li>c) Extension mechanisms</li> <li>d) Packages</li> </ul>	
	B)	<ul> <li>State True or False.</li> <li>1) A node is a computational resource.</li> <li>2) A property is a characteristic of the entity designated by a model element.</li> <li>3) A stereotype is a UML model element given more specific meaning.</li> <li>4) Use case can last for more than one session.</li> </ul>	)4
Q.2	A)	Write short notes on the following.01) Activity diagrams.2) Relationships in structural modeling.	)8
	B)	Explain the following terms.01) State Machines2) Priority call back Mechanism.	)6
Q.3	An a) b)	<b>swer the following.</b> What is UML? Explain conceptual model of UML. Explain the difference between interaction diagram and collaboration diagram.	4
Q.4	An a) b)	<b>1</b> What is a package? How it is represented in UML? Describe importing and exporting of packages. Draw the use case diagram for online digital library system.	4
Q.5	An a) b)	<b>swer the following.</b> Explain various notations used in UML. What are the modeling techniques for component diagram?	4
Q.6	An a) b)	<b>swer the following.</b> Explain object oriented design methodology with Grady Booch's approach. Explain in detail in common mechanism used in structural modeling.	4
Q.7	An a)	swer the following. 1 Describe the various steps in constructing object model?	4

b) Explain the terms and concepts used in deployment diagram?

							SLR-	SQ-	32	
Seat No.								Set	Ρ	
	M.C	C.A	A. (Semeste	r - IV) (Old) ( S	(CBCS) E	Exa	mination Mar/Apr-20 <sup>4</sup>	18		
Time: "	21/ Ц	اما	re	FINITE	AUTOM	AI	A May	Marke	· 70	
Instru	ction	is:	<ol> <li>Question N</li> <li>Attempt an</li> <li>Figures to 1</li> </ol>	o. 1 and 2 are y 3 questions fi he right indicat	compulsory rom Q. no. e full marks	y. 3 to s.	o Q. no. 7	Marks	. 70	
Q.1	A) (	<b>Ch</b> 1)	oose correct There are a) 5 c) 7	alternatives. tuples in Pu	ushdown A	uto b) d)	mata. 6 None of the above		10	
	2	2)	<ul><li>a) Intersection</li><li>c) Difference</li></ul>	lages are close n	ed under	b) d)	Homomorphism All of the these			
	;	3)	Number of sta with ab over { a) 3 c) 4	ates in finite aut a,b} is	tomata that —	t wi b) d)	Il accept all the strings end 2 5	ling		
	2	4)	The machine a) PDA c) NFA	that uses stack	as memor	d) uny uny uny uny uny uny uny uny uny uny	S DFA Turing Machine			
	Į	5)	Which of the f a) $L = \{a^m b^n c\}$ c) $L = \{a^n b^n b^n b^n b^n b^n b^n b^n b^n b^n b$	following languation $c^m   m \ge 1$ $  n \ge 1$	age is not o	con b) d)	text free? $L = \{a^m b^n c^{m+n}   n, m \ge 1\}$ None of the above	}		
	(	6)	According to ( automata is _ a) Regular c) Context free	Chomsky hiera 	rchy the lar	ngu b) d)	age accepted by finite Non-regular None of the above			
	-	7)	If L1 and L2 a a) Regular c) Context Fi	re regular then ee	L1-L2 is _	b) d)	Non Regular None of the above			
	8	8)	Regular expre exactly two 0' a) 1 <sup>*</sup> 01 <sup>*</sup> 01 <sup>*</sup> c) 0 (0+1) <sup>*</sup>	ession for a lan s over {0,1} is _	guage acce	epti b) d)	ing all the strings having 00 (0+1) <sup>*</sup> 0 1 <sup>*</sup> 0			
	ę	9)	In Push Dowr a) Set of stac c) Set of stat	n Automata Γ re ck symbols es	epresents _	b) d)	Set of input alphabet None of the above			
		10)	The Chomsky	Normal form o	converts the	e pa	arser tree of the grammar i	nto		
			a) Binary tre	е		b)	AVL tree			

d) None of the above

	B)	<ul> <li>State True or False.</li> <li>1) Type 0 languages are context free languages.</li> <li>2) In Greibach Normal Form there is single terminal in the right hand side of the production rule.</li> <li>3) Regular languages are also accepted by Turing machine.</li> <li>4) Regular languages are not closed under Kleeneclosure.</li> </ul>						04
Q.2	A)	Write short n a) What is G b) Explain Co	otes on the NF? Explain ontext Free	<b>e following.</b> with exampl Languages R	e Regular Lang	juages.		08
	B)	Write a short a) Determinis b) Derivation	a <b>note on</b> stic Push Do tree or pars	own Automata ser tree.	а.			06
Q.3	a)	What is leftmos leftmost and rig grammar G (E,	t and rightm htmost deriv {id, +,*), P,I	ost derivation vation and als E) where P is	n? Produce so construct given by	the string "id parser tree f	+id*id" using for following	08
	b)	Construct $\varepsilon$ -NF. (01 + 10) <sup>*</sup> + 1.	A for followii	ng regular ex	pression.			06
Q.4	a) b)	Construct PDA Explain closure	Construct PDA for following language L={wcw <sup>R</sup>   w € {a, b} <sup>*</sup> } 0 Explain closure properties of regular languages. 0					
Q.5	a)	Construct DFA	equivalent t →q0 q1 q2 q3 *q4	o following D 0 {q1, q4} Ø Ø Ø Ø	FA. <u>1</u> <u>q4</u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u>	2 {q2,q3} Ø {q2, q3} Ø Ø		08
	b)	What is ambigu ambiguous or n ambiguity from S→ iCtS  iC C→b	ous gramm ot to genera following gra tSeS   a	ar? Check wl ate the string ammar.	nether follow "ibtiaea", if f	ving gramma found remove	r is e the	06
Q.6	a)	Construct Turin L = $\{a^n b^n \}$	g machine f $n > 1$ }	or following l	anguage.			80
	b)	Construct DFA L1=Set of a L2=Set of a	for $L = L1 \cap$ Ill strings of	) L2 over {a, l even length arting with b	o} where,			06
Q.7	a)	Convert followir S→BBB   A A→ε B→bB   Δ	ng grammar	into CNF.				08
	b)	Prove that the I	anguage L =	$= \{a^n b^{n+1} \mid n$	$\geq 1$ } is not	regular.		06

Seat No.						Set	Ρ
	М.	C.A.	(Semeste	er - IV) (Old) (CE Scie	BCS) Exa	amination Mar/Apr-2018	
				Distributed Op	erating	System	
Time:	2½	Hours	i	-		Max. Marks	: 70
Instru	uctio	<b>ns:</b> 1) 2 3	) Question N ) Attempt an ) Figures to	lo. 1 and 2 are con y 3 questions from the right indicate fu	npulsory. Q. no. 3 t ull marks.	o Q. no. 7	
Q.1	A)	Cho 1) Ir ri a	ose correct in the token p ng structure ) Logically ) Both a an	<b>alternatives.</b> bassing of distribute d b	ed system b) d)	, processes are organized in a Physically None of the above	10
		2) If a c	timestamp ) Concurrer ) monotonio	of two events are s nt c	ame then b) d)	the events are non-concurrent blocked	
		3) If a b c d	one site fail ) All the site ) The rema ) Directly co ) All of the a	s in distributed sys will stop working ining sites can con onnected site will s above	tinue oper tinue workin	ating g	
		4) _ m a c	of nachines of ( ) Client ) Storage d	the distributed file distributed system. evices	system are b) d)	e dispersed among various Server All of the above	
		5) _ a c	is ) File replic ) client inte	not possible in dist ation rface	ributed file b) d)	system. Migration remote access	
		6) N a c	letwork oper ) Server ) Both (a) a	ating system runs	onb) d)	Every system in the server None of the above	
		7) R re a c	PC provides emote proce Stub Name	s (an) o dure.	on the clier b) d)	nt side, a separate one for each Identifier Process identifier	
		8) Ir a c	n a distribute )Polling )Token pas	ed system, link and ssing	site failure b) d)	e is detected by Handshaking Socket	
		9) M a c	lutual exclus ) Mutex loc ) Both(a) ar	sion can be provide ks nd (b)	ed by the _ b) d)	Binary semaphore None of the above	
		10)L ة ر	ogical exten a) System n c) Thread m	sion of computatio nigration nigration	nal migrat b) d)	ion is Process migration Data migration	

Set P

SLR-SQ-33

	B)	<ol> <li>State True or False.</li> <li>According to the ring algorithm, links between processes are unidirectional.</li> <li>A collection of instruction that perform a single logical function is called transaction.</li> <li>Data replication is favored where most process requests are read-only and where the data are relatively static.</li> <li>Remote procedure calls are used for communication between two processes on separate machine.</li> </ol>	04
Q.2	A)	<ul><li>Write short notes on the following.</li><li>1) File Replication</li><li>2) Message switching</li></ul>	08
	B)	<ul><li>Answer the following.</li><li>1) Explain domain name system.</li><li>2) What is virtual memory?</li></ul>	06
Q.3	Ans a) b)	<b>swer the following.</b> Which are the different techniques to avoid deadlock in distributed operating system? Discuss the communication protocol used in RPC.	07 07
Q.4	Ans a) b)	<b>swer the following.</b> Explain client-server model in detail. Explain clock synchronization in detail.	07 07
Q.5	Ans a) b)	<b>swer the following.</b> Discuss massage forwarding mechanism in process migration. Why do we use election algorithm. Explain Bully algorithm.	07 07
Q.6	Ans a)	swer the following. Describe distributed approach for implementing mutual exclusion in distributed system.	07
Q.7	b) Ans a)	Discuss about the distributed file system. <b>swer the following.</b> What are the main difference between a network and distributed operating system? Explain resource sharing in distribute environment	07 07 07
	D)		07

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Seat No.						S	et	Ρ
	M	.C./	A. (Semeste	er - V) (Old) (C So	CGPA) Exa cience	amination Mar/Apr-2018	6	
				ARTIFICAL	INTELLIG	ENCE		
Time:	21⁄2	Ηοι	ırs			Max. M	arks	: 70
Instru	uctio	ns:	<ol> <li>1) Question N</li> <li>2) Attempt an</li> <li>3) Figures to</li> </ol>	lo. 1 and 2 are c by 3 questions fro the right indicate	ompulsory. om Q. no. 3 t e full marks.	o Q. no. 7		
Q.1	A)	<b>Ch</b> 1)	until symbols of the senten a) Top-Dowr	alternatives. <i>v</i> ith the start sym at the terminals ce being parsed n parsing	bol and appl of the tree c b)	y the grammar rules forward orrespond to the components Bottom-Up parsing	5	10
		•	c) Reverse p	barsing	(d)	Object Oriented parsing		
		2)	propositions. a) Disbelief c) Belief	easures the strer	b) b)	Means-Ends Analysis Production system		
		3)	a) INGEST c) MBUILD	act to represent	building of n b) d)	iew information out of old. ATTEND GRASP		
		4)	node generat whose left sid a) Backward c) Certainty	oning suggest to ted at the previou des match it.	generate the us level and a b) d)	e next level by taking each applying to it all of the rules Forward Declarative Knowledge		
		5)	The average a) 50 c) 60	branching factor	Chess gam b) d)	e is 35 100		
		6)	The real-worl as in p a) Well desig c) Well conr	d facts would be propositional logi gned formulas pected formulas	represented c. b) d)	d as logical propositions writte Well formed formulas Well clausal formulas	ən	
		7)	a) DESIGN a) R1	program that prov ADVISOR	vides advice b) d)	on mineral exploration. PROSPECTOR MOLE		
		8)	a) Inquisitior	ability to acquire t Efficiency	new informa b)	ation easily. Investigation Efficiency		

- c) Adequate Efficiency
- 9) A two list OPEN and CLOSED are used in the \_\_\_\_\_ algorithm. a) AO\* b) A\*
  - c) AND-OR
- 10)The first requirement of a good \_\_\_\_\_ is that it causes motion.
  - a) Iterative deepening c) Problem obstruction
- b) Control strategy

d) Hill climbing

d) Acquisition Efficiency

d) Conceptual dependency

# Seat

No.

06

08

- 14

04

#### B) State True or False.

- 1) Abstraction provides a way of solving problems for which no more direct approach is available.
- 2) Recoverable problems are those in which solution steps cannot be undone.
- 3) DENDRAL is a program that infers the structure of organic compounds using mass spectrogram and nuclear magnetic resonance data.
- 4) Matching is a collection of attributes and associated values that describes some entity in the word.

#### Q.2 Write short notes on the following. A)

- a) AI Technique
- b) Semantic Net

#### Answer the following. B)

- a) What do you mean by Best first search?
- b) State Bayes Theorem in brief.

#### Q.3 Answer the following

What do you mean by Game Playing? Consider the following game tree a) having static score from player I points of view, suppose player I is maximizing player. What move should be chosen?



What do you mean by Resolution? Explain in detail concept of conversion to b) clause form with suitable example?

#### Q.4 Answer the following

- What do you mean by Artificial Intelligence? Explain in detail task domains of 07 a) it.
- b) What do you mean by knowledge representation? Explain in detail 07 approaches of knowledge representation?

#### Q.5 Answer the following.

What do you mean by Heuristic search technique? Discuss concept of 07 a) constraint satisfaction to solve following crypt-arithmetic problem.

CROSS
+ ROADS
DANGER
<u>+</u> C

What do you mean by production system? Discuss in detail production 07 b) system characteristics with suitable example.

### Q.6 Answer the following.

- a) Define the term Matching. Discuss in detail various ways to do Matching with **07** example.
- b) What do you mean by Natural Language Processing? Discuss various step 07 of it in detail.

### Q.7 Answer the following.

- a) Define the term expert system? Explain the knowledge acquisition activities 07 in detail.
- b) What do you mean by Script? Write a College Canteen script with a story: "Hemant went to Canteen. He ordered Bread and Butter. He ate food and ordered tea. He paid bill and left for class."

Seat No.						:	Set	Ρ
	Μ	.C.	A. (Semeste	er - V) (Old) (CG Scie	SPA) Exa ence	amination Mar/Apr-201	8	
				WEB DESIGN	TECHN	QUES		
Time:	21/2	Ηοι	irs			Max.	Marks	: 70
Instru	ictio	ns:	<ol> <li>Question N</li> <li>Attempt an</li> <li>Figures to</li> </ol>	Io. 1 and 2 are con y 3 questions from the right indicate full	npulsory. I Q. no. 3 t ull marks.	o Q. no. 7.		
Q.1	A)	<b>Ch</b> 1)	Choose correct Choose the c a) <headings c) <h6></h6></headings 	alternatives. orrect HTML elemo	ent for the b) d)	largest heading: <head> <h1></h1></head>		10
		2)	What is the c a) <a href="&lt;br&gt;b) &lt;a name=&lt;br&gt;c) &lt;a url=" htt<br="">d) <a>http://v</a></a>	orrect HTML for cre http://www.w3schc :"http://www.w3sch tp://www.w3school www.w3schools.cc	eating a hy ools.com"> ools.com" s.com">W om	yperlink? W3Schools > W3Schools.com '3Schools.com		
		3)	What is the ca a) <checkbo c) <check></check></checkbo 	orrect HTML for ma x>	aking a ch b) d)	eckbox? <input type="checkbox"/> <input type="check"/>		
		4)	Javas to user events a) Client-side c) Local	Script statements e s such as mouse-c e	embedded clicks, form b) d)	in an HTML page can resp input, and page navigation Server-side Native	ond 1.	
		5)	Which of the a) 2names c) FirstAndLa	following is not a v ast	alid JavaS b) d)	Cript variable name? _first_and_last_names None of the above		
		6)	What makes a) It works as b) It works th c) It uses C+ d) It makes c	Ajax unique? s a stand-alone We he same with all We he as its programm data requests asyn	eb-develop eb browse ing langua chronousl	oment tool. rs. age. y.		
		7)	AJAX based ( a) JavaScrip b) JavaScrip c) VBScript a d) JavaScrip	on t and XML t and Java and XML t and HTTP reques	sts			
		8)	What does XI a) eXtensible c) eXtra Moo	ML stand for? e Markup Languag dern Link	e b) d)	X-Markup Language Example Markup Languag	je	
		9)	Which statem a) All XML el b) All XML el c) All XML de d) All the sta	ent is true? lements must be lo lements must be p ocuments must ha tements are true	ower case roperly clo ve a DTD	sed		

SLR-SQ-35

### Q.1

		<ul><li>10)Which is not a correct name for an XM</li><li>a) <note></note></li><li>c) &lt;4dollar&gt;</li></ul>	L element? b) <h1> d) All 3 names are incorrect</h1>	
	B)	<ul> <li>State True or False.</li> <li>1) HTML comments start with <!-- and er</li--> <li>2) The external JavaScript file must conta</li> <li>3) Ajax is a programming language.</li> <li>4) This is a well formed XML document.</li> <li><?xml version="1.0"?></li> <li><to>Tove</to></li> <li><from>Jani</from></li> <li><heading>Reminder</heading></li> <li><message>Don't forget me this we</message></li> </li></ul>	nd with> ain the <script></script>	

u)	
ty of a n	nessage. It guarantees that
b)	Over view
d)	Left
sh algor	ithm?
b)	SHA-1
d)	None of these
SSL rela	ted alerts to the peer entity?
b)	Handshake Protocol
d)	Change Cipher Spec Protocol
b)	Series Socket Layer
d)	Secure Socket Layer
	Page <b>1</b> of <b>2</b>

		NETWORK SE	CURITY	
Time: 2	1∕₂ Ho	urs	Max. Marks	: 70
Instruc	tions	<ul> <li>1) Question No. 1 and 2 are compute</li> <li>2) Attempt any 3 questions from Q.</li> <li>3) Figures to the right indicate full means</li> </ul>	lsory. no. 3 to Q. no. 7 narks.	
Q.1 A	<b>) C</b> 1)	<ul> <li>hoose correct alternatives.</li> <li>) The prevents or inhibits the communications facilities.</li> <li>a) Reply</li> <li>c) Modification</li> </ul>	normal use or management of b) Denial of service d) Masquerade	10
	2)	<ul> <li>A Processes the input element at a time, as it goes ale</li> <li>a) Random cipher</li> <li>c) Stream cipher</li> </ul>	ments continuously, producing output ong. b) Block cipher d) None of these	
	3)	<ul> <li>input.</li> <li>a) Plaintext</li> <li>c) ASCII text</li> </ul>	b) Ciphertext d) None of these	
	4)	) RFC means a) Response From Customer c) Response From Client	<ul><li>b) Request For Common</li><li>d) Request For Comment</li></ul>	
	5)	<ul> <li>Pretty good privacy (PGP) is used i</li> <li>a) Browser security</li> <li>c) FTP security</li> </ul>	n b) Email security d) None of these	
	6)	<ul> <li>One of protocols to provide security</li> <li>a) Pretty good privacy</li> <li>c) Alert protocol</li> </ul>	at application layer is b) Handshake protocol d) Record protocol	
	7)	<ul> <li>A hash function guarantees integrity message has not be</li> <li>a) Replaced</li> <li>c) Changed</li> </ul>	y of a message. It guarantees that b) Over view d) Left	
	8)	) The RSA signature uses which has a) MD5 c) MD5 and SHA-1	h algorithm? b) SHA-1 d) None of these	
	9)	<ul> <li>Which protocol is used to convey S</li> <li>a) Alert Protocol</li> <li>c) Upper-Layer Protocol</li> </ul>	SL related alerts to the peer entity? b) Handshake Protocol d) Change Cipher Spec Protocol	
	1(	0)The full form of SSL is		

Science

Seat M.C.A. (Semester - V) (Old) (CGPA) Examination Mar/Apr-2018

a) Serial Session Layerc) Session Secure Layer

# SLR-SQ-36

Set

Ρ

	В)	<ul> <li>State True or False.</li> <li>1) Tunnel mode ESP is used to encrypt an entire IP packet.</li> <li>2) Passive attack attempts to alter system resources or affect their operation.</li> <li>3) AH covers the packet format and general issues related to the use of the ESP for packet encryption and, optionally, authentication.</li> <li>4) The Handshake Protocol is used before any application data is transmitted.</li> </ul>	04
Q.2	A)	<ul><li>Write short notes on the following.</li><li>a) Non-Repudiation</li><li>b) Passwords</li></ul>	80
	B)	<ul> <li>Answer the following.</li> <li>a) What is Authentication Header (AH)? Explain various fields containing AH.</li> <li>b) What is Cryptanalysis? Explain various cryptanalytic attacks.</li> </ul>	06
Q.3	Ans a) \  ; b) \	<b>wer the following</b> What is IPSec Document? Explain IPSec Document overview with well abeled diagram. What is SSL? Explain SSL Record Protocol.	07 07
Q.4	Ans a) \ b) S	<b>wer the following</b> What is intruder? Explain different types of intrusion techniques. State and explain various security services in detail.	07 07
Q.5	Ans a) ∖ b) E	<b>wer the following.</b> What is Attack? Explain different types of Active attack. Explain in detail Bell-LaPadula Model with its importance.	07 07
Q.6	Ans a) ∖ b) ∖	wer the following. What is Access control list? Explain capability list with example. What is Authentication? Explain the procedure for Password Authentication Protocol.	07 07
Q.7	Ans a) \ e b) \	wer the following. What is the difference between Block cipher and Stream cipher? Explain with example. What are the different steps in RSA algorithm? Explain with suitable example.	07 07

Time	: 21⁄2	Ηοι	ırs			Max. Marks:	70
Instr	uctio	ns:	1) 2) 3)	Question No. 1 and 2 are computed Attempt any 3 questions from Q Figures to the right indicate full r	ulsory. . no. 3 t marks.	o Q. no. 7	
Q.1	A)	<b>C</b> h 1)	Ge a) c)	eological exploration uses Electromagnetic imaging Gamma ray imaging	b) d)	Microwave band imaging Acoustic imaging	10
		2)	Si im a) c)	ze of a binary image is 8 bytes. H nage? 8 128	How ma b) d)	ny pixels are there in the 64 512	
		3)	W a) b) c) d)	hich of the following is <i>incorrect</i> second order derivative must be first order derivative must be ze second order derivative must be gray-level step or ramp first order derivative must be ze	stateme e zero a ero in fla e nonze ero alon	ent? along ramps of constant slope at segments ero at the onset and end of a g ramps of constant slope	
		4)	W im a) b) c) d)	hich of the following statement is age? origin will be shifted at the cent spectrum is symmetric about or brighter than the original image at the center average value of i	s false ro re rigin mage w	elated to Fourier transformed	
		5)	W a) b) c) d)	hich of the following statements notch filters must appear in syn only one pair of notch filter can notch filter can be of any shape if only one filter appears for not origin.	is false? nmetric be impl ch filter	? pairs about the origin lemented at a time , then the filter must be at	
		6)	Ex op a) b) c) d)	Attraction of outer boundary of an berations? dilation followed by subtraction erosion followed by subtraction subtraction followed by dilation subtraction followed by erosion	object ı	uses which of the following	
		7)	Re i	egion filling i. Require multiple types of struc ii. Requires multiple iterations ii. Uses union operation once	cturing e	elements	

M.C.A. (Semester - V) (Old) (CGPA) Examination Mar/Apr-2018 Science **DIGITAL IMAGE PROCESSING** 

### Instructio

### Q.1 A)

Seat

No.

- eration once
- a) (i) and (ii) c) (ii) and (iii)

- b) (i) and (iii)d) (i), (ii) and (iii)

SLR-SQ-37

## Set

Ρ

						•=•4	• -	
8)	The mask a) Gaussi	usec an	d for li	ne dete	ction i	s b) Laplacian d) Butterworth		
0)	c) Ideal	umbo	or of o	chana	ic 022	a) Butterworth		
9)	a) 003232 c) 030322	211 211 211		a shape	15 033	b) 03322101 d) 00332121		
10)	) Which of t cheque nu a) font na b) magne	he fo mbe me is tized	ollowii rs? s B-13 Link u	ng state 3E ised for	ments orintir	s is false regarding font used to print		
	<ul><li>c) signal (</li><li>d) four sp</li></ul>	gene ecial	rated chara	based r acters a	ate of re fou	change of characters area		
Fil 1) 2) 3) 4)	<ul> <li>Fill in the blanks or true / false</li> <li>1) The chessboard distance between (3, 7, -2) and (5, 4, 3) is</li> <li>2) The PDF for exponential noise is given as</li> <li>3) Expression for hit or miss transform is</li> <li>4) The minimum distance classifier gives best performance when the distribution of each class about its mean is in the form of a hypercloud in <i>n</i>-dimensional pattern space.</li> </ul>							
Wr a) b)	<b>rite short n</b> Zooming te Basic Forn	otes echn nulat	iques ions d	h <b>e follo</b> of regior	wing.		08	
An a)	<b>Swer the f</b> Find shorte following:	ollov est m	<b>ving.</b> n-path	n betwee	en P a	nd Q and give path length for the	06	
	1	1	P 1	1 0	1			
	1			) 1	0			
	1		1 (	) 1	0			
	C	) '	1 1	Q 1	1			
b)	If the thres	hold	is 25	0, check	whe	ther a line with – 45 degree inclination		
	exists in th	e fol	lowing	g image	segn	nent?		
		/1 62	30 136	89	-			
		~~	1 100		1			

### 1 17 110

### Q.3 Answer the following

B)

Q.2 A)

B)

- a) How image can be enhanced using arithmetic/logic operations? What is use of each technique? Discuss.
- **b)** For the following image information perform histogram equalization:

Intensity	0	1	2	3	4	5	6	7
No. of pixels	0	0	180	400	300	250	80	0

#### Answer the following Q.4

- a) Deriver one and two dimensional Fourier transform and its inverse in continuous domain.
- **b)** Perform AND operation between following 8bit image segments.

	39	42	63		58	35	132
A=	183	201	21	B=	29	84	244
	143	9	221		3	86	125

14

14

14

### Q.5 Answer the following.

- a) Explain design of adaptive filter for noise reduction.
- **b)** Extract internal and external boundaries for the following image.



### Q.6 Answer the following.

- a) What are different relational descriptors? Briefly explain few of them.
- **b)** Threshold the following image using Global thresholding algorithm. The initial threshold may be selected using the median filter on entire image and the algorithm iteration must stop when difference of threshold is less than 0.1

60	12	33	46
18	29	45	62
41	39	12	7
59	25	26	14

### Q.7 Answer the following.

- a) Explain the construction and working of E-13B font character reading system.
- b) Given the value of pixels in a row of an image, find first and second order derivatives and possible appearance of location of an edge using second order derivatives

10, 10, 10, 10, 40, 70, 80, 90, 100, 110, 120, 120, 120

14

14
	Μ	C.A. (Semester - V) (Old) (CGPA) Examination Mar/Apr-2018 Science	
		MOBILE COMPUTING	
Time	e: 2½	ours Max. Mar	ks: 70
Insti	uctio	<ul> <li>s: 1) Question No. 1 and 2 are compulsory.</li> <li>2) Attempt any 3 questions from Q. no. 3 to Q. no. 7</li> <li>3) Figures to the right indicate full marks.</li> </ul>	
Q.1	A)	<ul> <li>Choose correct alternatives.</li> <li>1) allows subscribers to operate in mobile phone service areas other than the service area where the service is subscribed.</li> <li>a) Roaming</li> <li>b) Grade of service</li> <li>c) Both a and b</li> <li>d) None of the above</li> </ul>	10
		<ul> <li>2) In cellular technology the concept used is</li> <li>a) Time Reuse</li> <li>b) Code Reuse</li> <li>c) Frequency Reuse</li> <li>d) None of these</li> </ul>	
		<ul> <li>A small division of a given geographical area is known as</li> <li>a) Shell</li> <li>b) Cell</li> <li>c) Core</li> <li>d) Kernel</li> </ul>	
		<ul> <li>4) in FDMA is assigned between the spectrum of two adjacent users</li> <li>a) Interference band</li> <li>b) Co-inter band</li> <li>c) Guard band</li> <li>d) Inference band</li> </ul>	
		<ul> <li>5) The uplink frequency of P-GSM system is</li> <li>a) 1850-1910 MHz</li> <li>b) 1710-1785 MHz</li> <li>c) 890-915 MHz</li> <li>d) None of these</li> </ul>	
		<ul> <li>6) The type of access technology used in GSM technology is</li> <li>a) FDMA / TDMA</li> <li>b) CDMA</li> <li>c) OFDMA</li> <li>d) None of the above</li> </ul>	
		<ul> <li>A television broadcast is an example of transmission.</li> <li>a) Simplex</li> <li>b) Half-duplex</li> <li>c) Full-duplex</li> <li>d) Automatic</li> </ul>	
		<ul> <li>8) The protocol solves the problem of hidden and exposed terminal.</li> <li>a) PRMA</li> <li>b) DAMA</li> <li>c) TDMA</li> <li>d) MACA</li> </ul>	
		<ul> <li>9) PSTN stands for</li> <li>a) Pakistan Service Telephone Network</li> <li>b) Police Station Telephone Network</li> <li>c) Public Switch Telephone Network</li> <li>d) None of the above</li> </ul>	
		10)The xml file that contains all the text that your application uses.a) stack.xmlb) string.xmlc) text.xmld) app.xml	

## Seat No. M.C.A. (Semester - V) (Old) (CGPA)

# SLR-SQ-40

Set P

	B)	<ol> <li>State True or False.</li> <li>1) EIR is a database that contains information about the identity of mobile equipment.</li> <li>2) Fading of the received radio signals in a mobile communication environment occurs because of single path propagation.</li> <li>3) The R.java file is where you edit the resources of android project.</li> <li>4) In android there can be only one activity at given time.</li> </ol>	04				
Q.2	A)	<ul><li>Write short notes on the following.</li><li>1) Frequency regulations.</li><li>2) Security in GSM system.</li></ul>	80				
	B)	<ul><li>Answer the following.</li><li>1) What are the applications of mobile computing?</li><li>2) Explain the term Medium Access Control.</li></ul>	06				
Q.3	Ans A) B)	<ul> <li>Answer the following.</li> <li>A) What is multiplexing? Explain time division multiplexing scheme.</li> <li>B) Explain how the classic aloha and slotted aloha schemes are implemented.</li> </ul>					
Q.4	Ans A) B)	wer the following. Name the main elements of GSM system and describe their functions. Explain the data transfer from mobile node to a correspondent node and vice versa.	14				
Q.5	Ans A) B)	<b>wer the following.</b> Explain the scheme MACA with example. Explain the functional architecture of IEEE802.11.	14				
Q.6	Ans A) B)	wer the following. Explain the direct sequence spread spectrum. What is congestion control? Explain the mechanism slow start and fast recovery.	14				
Q.7	Ans A) B)	<b>wer the following.</b> Explain android system architecture. How to manage your Wi-Fi using WifiManager android Wi-Fi connectivity service? Explain in brief.	14				

Seat	:					•			
No.						Set			
	М.	C./	4. (Semeste	r - V) (New) ( So	CBCS) Exa	amination Mar/Apr-2018			
Time	01/			ARTIFICAL	INTELLIG	ENCE Max Mar	(a) 70		
Inctri	Z/2	nou	1) Outpation N	la 1 and 2 ara a	ompulaan <i>i</i>	IVIAX. IVIAIr	.5.70		
instr	iciio	115.	<ol> <li>2) Attempt an</li> <li>3) Figures to</li> </ol>	y 3 questions fro the right indicate	om Q. no. 3 t e full marks.	to Q. no. 7			
Q.1	A)	<b>Ch</b> 1)	hoose correct alternatives. ) begin with the start symbol and apply the grammar rules forward until symbols at the terminals of the tree correspond to the components of the sentence being parsed.						
			a) Top-Dowr c) Reverse p	n parsing parsing	b) d)	Bottom-Up parsing Object Oriented parsing			
		2)	me	easures the strer	ngth of the e	vidence in favour of a set of			
			propositions. a) Disbelief c) Belief		b) d)	Means-Ends Analysis Production system			
		3)	a) INGEST c) MBUILD	act to represent	building of r b) d)	new information out of old. ATTEND GRASP			
		4)	node generat	oning suggest to ed at the previou les match it.	generate the us level and	e next level by taking each applying to it all of the rules			
			a) Backward		b)	Forward			
			c) Certainty		d)	Declarative Knowledge			
		5)	The average	branching factor	Chess gam <sup>.</sup> (م	e is 35			
			c) 60		d)	100			
		6)	The real-work	d facts would be	e represented	d as logical propositions written			
			as in p a) Well desig c) Well conn	propositional logi gned formulas vected formulas	c. b) d)	Well formed formulas Well clausal formulas			
		7)	a) DESIGN / c) R1	program that prov ADVISOR	vides advice b) d)	on mineral exploration. PROSPECTOR MOLE			
		8)	a) Inquisition c) Adequate	ability to acquire Efficiency Efficiency	new informa b) d)	ation easily. Investigation Efficiency Acquisition Efficiency			

- 9) A two list OPEN and CLOSED are used in the \_\_\_\_\_ algorithm. a) AO\* b) A\*
  - c) AND-OR
- 10)The first requirement of a good \_\_\_\_\_ is that it causes motion.
  - a) Iterative deepening c) Problem obstruction
- b) Control strategy d) Conceptual dependency
- d) Hill climbing

SLR-SQ-41

0

Page 2 of 3

# B) State True or False.

- 1) Abstraction provides a way of solving problems for which no more direct approach is available.
- 2) Recoverable problems are those in which solution steps cannot be undone.
- 3) DENDRAL is a program that infers the structure of organic compounds using mass spectrogram and nuclear magnetic resonance data.
- 4) Matching is a collection of attributes and associated values that describes some entity in the word.

## Q.2 A) Write short notes on the following.

- a) AI Technique
- **b)** Semantic Net

## B) Answer the following.

- a) What do you mean by Best first search?
- **b)** State Bayes Theorem in brief.

## Q.3 Answer the following

a) What do you mean by Game Playing? Consider the following game tree having static score from player I points of view, suppose player I is maximizing player. What move should be chosen?



**b)** What do you mean by Resolution? Explain in detail concept of conversion to clause form with suitable example?

### Q.4 Answer the following

- a) What do you mean by Artificial Intelligence? Explain in detail task domains of **07** it.
- b) What do you mean by knowledge representation? Explain in detail07 approaches of knowledge representation?

### Q.5 Answer the following.

a) What do you mean by Heuristic search technique? Discuss concept of constraint satisfaction to solve following crypt-arithmetic problem.
 07

CROSS
+ ROADS
DANGER
CF <u>+ R(</u> DAI

b) What do you mean by production system? Discuss in detail production 07 system characteristics with suitable example.

#### 04

08

06

14

#### Q.6 Answer the following.

- a) Define the term Matching. Discuss in detail various ways to do Matching with **07** example.
- b) What do you mean by Natural Language Processing? Discuss various step 07 of it in detail.

#### Q.7 Answer the following.

- a) Define the term expert system? Explain the knowledge acquisition activities 07 in detail.
- b) What do you mean by Script? Write a College Canteen script with a story: "Hemant went to Canteen. He ordered Bread and Butter. He ate food and ordered tea. He paid bill and left for class."

Seat No.						Set	Ρ
	Μ.	.C./	A. (Semester	r - V) (New) (CB Scie	CS) Exa	amination Mar/Apr-2018	
				WEB DESIGN	TECHNI	QUES	
Time	21⁄2	Ηοι	Irs			Max. Mark	s: 70
Instru	uctio	ons:	<ol> <li>Question No</li> <li>Attempt any</li> <li>Figures to t</li> </ol>	<ul> <li>o. 1 and 2 are com</li> <li>/ 3 questions from</li> <li>he right indicate full</li> </ul>	pulsory. Q. no. 3 t Il marks.	o Q. no. 7.	
Q.1	A)	<b>Ch</b> 1) 2)	Choose correct a Choose the co a) <heading> c) <h6> What is the co a) <a <br="" href="h&lt;br&gt;b) &lt;a name=">c) <a url="http://www.communication.com"></a></a></h6></heading>	alternatives. prrect HTML eleme orrect HTML for cre http://www.w3schools p://www.w3schools	ent for the b) d) eating a hy ols.com"> ools.com"> S.com">W	largest heading: <head> <h1> /perlink? W3Schools  &gt; W3Schools.com  '3Schools.com</h1></head>	10
		3)	<ul> <li>d) <a>nttp://w</a></li> <li>What is the cc</li> <li>a) <checkbox< li=""> <li>c) <check></check></li> </checkbox<></li></ul>	orrect HTML for ma	n king a ch b) d)	eckbox? <input type="checkbox"/> <input type="check"/>	
		4)	JavaS to user events a) Client-side c) Local	Script statements en such as mouse-cl	mbedded icks, form b) d)	in an HTML page can respond input, and page navigation. Server-side Native	
		5)	Which of the f a) 2names c) FirstAndLa	ollowing is not a va ast	alid JavaS b) d)	cript variable name? _first_and_last_names None of the above	
		6)	What makes A a) It works as b) It works the c) It uses C+- d) It makes da	Ajax unique? a stand-alone We e same with all We + as its programmi ata requests async	b-develor b browse ng langua chronously	oment tool. rs. age. y.	
		7)	<ul><li>AJAX based c</li><li>a) JavaScript</li><li>b) JavaScript</li><li>c) VBScript a</li><li>d) JavaScript</li></ul>	on and XML and Java nd XML and HTTP reques	ts		
		8)	What does XM a) eXtensible c) eXtra Mode	/L stand for? Markup Language ern Link	e b) d)	X-Markup Language Example Markup Language	
		9)	<ul><li>Which stateme</li><li>a) All XML ele</li><li>b) All XML ele</li><li>c) All XML do</li><li>d) All the stat</li></ul>	ent is true? ements must be lov ements must be pro ocuments must hav ements are true	wer case operly clo re a DTD	sed	

# Time

# Q.1

		<ul><li>10)Which is not a correct name for an XM</li><li>a) <note></note></li><li>c) &lt;4dollar&gt;</li></ul>	L element? b) <h1> d) All 3 names are incorrect</h1>	
	B)	<ul> <li>State True or False.</li> <li>1) HTML comments start with <!-- and er</li--> <li>2) The external JavaScript file must conta</li> <li>3) Ajax is a programming language.</li> <li>4) This is a well formed XML document.</li> <li><?xml version="1.0"?></li> <li><to>Tove</to></li> <li><from>Jani</from></li> <li><heading>Reminder</heading></li> <li><message>Don't forget me this wead</message></li> </li></ul>	nd with> in the <script></script>	

Instr	uctio	ns	<ul> <li>1) Question No. 1 and 2 are compulse</li> <li>2) Attempt any 3 questions from Q. no</li> <li>3) Figures to the right indicate full ma</li> </ul>	ory. o. 3 t rks.	to Q. no. 7	
Q.1	A)	<b>CI</b> 1)	<ul> <li>noose correct alternatives.</li> <li>The prevents or inhibits the n communications facilities.</li> <li>a) Reply</li> <li>c) Modification</li> </ul>	orma b) d)	al use or management of Denial of service Masquerade	10
		2)	<ul> <li>A Processes the input element one element at a time, as it goes alor</li> <li>a) Random cipher</li> <li>c) Stream cipher</li> </ul>	ents ng. b) d)	continuously, producing output Block cipher None of these	
		3)	is the original message or input. a) Plaintext c) ASCII text	data b) d)	that is fed into the algorithm as Ciphertext None of these	
		4)	RFC means a) Response From Customer c) Response From Client	b) d)	Request For Common Request For Comment	
		5)	Pretty good privacy (PGP) is used in a) Browser security c) FTP security	b) d)	Email security None of these	
		6)	One of protocols to provide security a a) Pretty good privacy c) Alert protocol	it app b) d)	olication layer is Handshake protocol Record protocol	
		7)	A hash function guarantees integrity of message has not be a) Replaced c) Changed	ofar b) d)	nessage. It guarantees that Over view Left	
		8)	The RSA signature uses which hash a) MD5 c) MD5 and SHA-1	algo b) d)	rithm? SHA-1 None of these	
		9)	Which protocol is used to convey SSI a) Alert Protocol c) Upper-Layer Protocol	_ rela b) d)	ated alerts to the peer entity? Handshake Protocol Change Cipher Spec Protocol	
		10	))The full form of SSL is a) Serial Session Layer c) Session Secure Layer	b) d)	Series Socket Layer Secure Socket Layer	

Time: 2<sup>1</sup>/<sub>2</sub> Hours

M.C.A. (Semester - V) (New) (CBCS) Examination Mar/Apr-2018 Science **NETWORK SECURITY** 

SLR-SQ-43

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Set Ρ

Max. Marks: 70

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	В)	<ol> <li>State True or False.</li> <li>1) Tunnel mode ESP is used to encrypt an entire IP packet.</li> <li>2) Passive attack attempts to alter system resources or affect their operation.</li> <li>3) AH covers the packet format and general issues related to the use of the ESP for packet encryption and, optionally, authentication.</li> <li>4) The Handshake Protocol is used before any application data is transmitted.</li> </ol>	04			
Q.2	A)	<ul><li>Write short notes on the following.</li><li>a) Non-Repudiation</li><li>b) Passwords</li></ul>	08			
	B)	<ul> <li>Answer the following.</li> <li>a) What is Authentication Header (AH)? Explain various fields containing AH.</li> <li>b) What is Cryptanalysis? Explain various cryptanalytic attacks.</li> </ul>	06			
Q.3	Ans a) \  ; b) \	w <b>er the following</b> What is IPSec Document? Explain IPSec Document overview with well abeled diagram. What is SSL? Explain SSL Record Protocol.	07 07			
Q.4	Ans a) \ b) S	w <b>er the following</b> What is intruder? Explain different types of intrusion techniques. State and explain various security services in detail.	07 07			
Q.5	<ul> <li>Answer the following.</li> <li>a) What is Attack? Explain different types of Active attack.</li> <li>b) Explain in detail Bell-LaPadula Model with its importance.</li> </ul>					
Q.6	Ans a) V b) V F	wer the following. What is Access control list? Explain capability list with example. What is Authentication? Explain the procedure for Password Authentication Protocol.	07 07			
Q.7	Ans a) \ e b) \	wer the following. What is the difference between Block cipher and Stream cipher? Explain with example. What are the different steps in RSA algorithm? Explain with suitable example.	07 07			

No.	_		Set	Ρ
	M	.C./	A. (Semester - V) (New) (CBCS) Examination Mar/Apr-2018 Science	
			DIGITAL IMAGE PROCESSING	
Time	: 21⁄2	Ηοι	urs Max. Marks:	70
Instr	uctio	ons:	<ul> <li>1) Question No. 1 and 2 are compulsory.</li> <li>2) Attempt any 3 questions from Q. no. 3 to Q. no. 7</li> <li>3) Figures to the right indicate full marks.</li> </ul>	
Q.1	A)	<b>Ch</b> 1)	noose correct alternatives.Geological exploration usesa) Electromagnetic imagingb) Microwave band imagingc) Gamma ray imagingd) Acoustic imaging	10
		2)	Size of a binary image is 8 bytes. How many pixels are there in the image? a) 8 b) 64 c) 128 d) 512	
		3)	<ul> <li>Which of the following is <i>incorrect</i> statement?</li> <li>a) second order derivative must be zero along ramps of constant slope</li> <li>b) first order derivative must be zero in flat segments</li> <li>c) second order derivative must be nonzero at the onset and end of a gray-level step or ramp</li> <li>d) first order derivative must be zero along ramps of constant slope</li> </ul>	
		4)	<ul> <li>Which of the following statement is false related to Fourier transformed image?</li> <li>a) origin will be shifted at the centre</li> <li>b) spectrum is symmetric about origin</li> <li>c) brighter than the original image</li> <li>d) at the center average value of image will be there</li> </ul>	
		5)	<ul> <li>Which of the following statements is false?</li> <li>a) notch filters must appear in symmetric pairs about the origin</li> <li>b) only one pair of notch filter can be implemented at a time</li> <li>c) notch filter can be of any shape</li> <li>d) if only one filter appears for notch filter, then the filter must be at origin.</li> </ul>	
		6)	<ul> <li>Extraction of outer boundary of an object uses which of the following operations?</li> <li>a) dilation followed by subtraction</li> <li>b) erosion followed by subtraction</li> <li>c) subtraction followed by dilation</li> <li>d) subtraction followed by erosion</li> </ul>	
		7)	Region filling i. Require multiple types of structuring elements ii. Requires multiple iterations iii. Uses union operation once	

- b) (i) and (iii) d) (i), (ii) and (iii)

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- a) (i) and (ii) c) (ii) and (iii)



8)	The mas a) Gaus	sk use ssian	d for li	ne de	tection	is b) Laplacian					
	c) Ideal					d) Butterworth					
9)	<ul> <li>9) If shape number of a shape is 03313303, its 4 chain code is</li> <li>a) 00323211</li> <li>b) 03322101</li> <li>c) 03032211</li> <li>d) 00332121</li> </ul>										
10	) Which o cheque a) font i b) magi c) signa d) four s	of the f numbe name netizee al gene specia	ollowi ers? is Β-1 d ink υ erated I char	ng sta 3E Ised fo base acters	or print d rate of are fo	ts is false regarding font used to print ing of change of characters area und in the font					
Fil 1) 2) 3) 4)	<ul> <li>Fill in the blanks or true / false</li> <li>1) The chessboard distance between (3, 7, -2) and (5, 4, 3) is</li> <li>2) The PDF for exponential noise is given as</li> <li>3) Expression for hit or miss transform is</li> <li>4) The minimum distance classifier gives best performance when the distribution of each class about its mean is in the form of a hypercloud in <i>n</i>-dimensional pattern space.</li> </ul>										
۱۸/r	rita sharf	t noto	s on t	ha fal	lowing		08				
a)	Zooming	n techr			iowing	j.	00				
b)	Basic Fo	ormula	tions	of reai	on						
~,		,		orrog	on		••				
An	swer the	e tollo	wing.		-		06				
a)	Find sho	ortest r	n-patr	n betw	een P	and Q and give path length for the					
	IOIIOWINQ	j: 1	10	1 0	1	7					
	-	1		ן 1 1		-					
	-	1	0			-					
	-	1	1 (	) 1	0	-					
	-	0	1 1	Q 1	1						
b)	If the thr	esholo	d is 25	0, che	ck whe	ether a line with – 45 degree inclination					
	exists in	the fo	llowin	g ima	ge seg	ment?					
		71	30	89	)						
		62	136	90	)						
		1	17	11	0						

### Q.3 Answer the following

B)

Q.2 A)

B)

- a) How image can be enhanced using arithmetic/logic operations? What is use of each technique? Discuss.
- b) For the following image information perform histogram equalization:

Intensity	0	1	2	3	4	5	6	7
No. of pixels	0	0	180	400	300	250	80	0

#### Q.4 Answer the following

- a) Deriver one and two dimensional Fourier transform and its inverse in continuous domain.
- b) Perform AND operation between following 8bit image segments.

	39	42	63		58	35	132
A=	183	201	21	B=	29	84	244
	143	9	221		3	86	125

14

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### Q.5 Answer the following.

- a) Explain design of adaptive filter for noise reduction.
- **b)** Extract internal and external boundaries for the following image.



#### Q.6 Answer the following.

- a) What are different relational descriptors? Briefly explain few of them.
- **b)** Threshold the following image using Global thresholding algorithm. The initial threshold may be selected using the median filter on entire image and the algorithm iteration must stop when difference of threshold is less than 0.1

60	12	33	46
18	29	45	62
41	39	12	7
59	25	26	14

### Q.7 Answer the following.

- a) Explain the construction and working of E-13B font character reading system.
- b) Given the value of pixels in a row of an image, find first and second order derivatives and possible appearance of location of an edge using second order derivatives

10, 10, 10, 10, 40, 70, 80, 90, 100, 110, 120, 120, 120

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	Μ.	C./	A. (Semester - V) (New) (CBCS) I Science	Examination Mar/Apr-2018	
			MOBILE COMPU	ITING	
Time	: 21⁄2	Ηοι	Jrs	Max. Ma	rks: 70
Instr	uctio	ns:	1) Question No. 1 and 2 are compulsor	V.	
			<ul><li>2) Attempt any 3 questions from Q. no.</li><li>3) Figures to the right indicate full mark</li></ul>	3 to Q. no. 7 is.	
Q 1	Δ)	Cł	soose correct alternatives		10
	,,	1)	allows subscribers to operate i other than the service area where the s a) Roaming c) Both a and b	n mobile phone service areas service is subscribed. b) Grade of service d) None of the above	
		2)	In cellular technology the concept used a) Time Reuse c) Frequency Reuse	l is b) Code Reuse d) None of these	
		3)	A small division of a given geographica a) Shell c) Core	ll area is known as b) Cell d) Kernel	
		4)	<ul> <li> in FDMA is assigned between the a) Interference band</li> <li>c) Guard band</li> </ul>	ne spectrum of two adjacent users b) Co-inter band d) Inference band	5.
		5)	The uplink frequency of P-GSM system a) 1850-1910 MHz c) 890-915 MHz	n is b)  1710-1785 MHz d)  None of these	
		6)	The type of access technology used in a) FDMA / TDMA c) OFDMA	<ul><li>GSM technology is</li><li>b) CDMA</li><li>d) None of the above</li></ul>	
		7)	A television broadcast is an example of a) Simplex c) Full-duplex	f transmission. b) Half-duplex d) Automatic	
		8)	The protocol solves the problem a) PRMA c) TDMA	<ul><li>of hidden and exposed terminal.</li><li>b) DAMA</li><li>d) MACA</li></ul>	
		9)	<ul> <li>PSTN stands for</li> <li>a) Pakistan Service Telephone Network</li> <li>b) Police Station Telephone Network</li> <li>c) Public Switch Telephone Network</li> <li>d) None of the above</li> </ul>	rk	
		10	<ul> <li>a) stack.xml</li> <li>b) text.xml</li> <li>c) text.xml</li> </ul>	text that your application uses. b) string.xml d) app.xml	

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	B)	<ol> <li>State True or False.</li> <li>1) EIR is a database that contains information about the identity of mobile equipment.</li> <li>2) Fading of the received radio signal in a mobile communication environment occurs because of single path propagation.</li> <li>3) The R.java file is where you edit the resources of android project.</li> <li>4) In android there can be only one activity at given time.</li> </ol>	04
Q.2	A)	<ul><li>Write short notes on the following.</li><li>1) Frequency regulations.</li><li>2) Security in GSM system.</li></ul>	08
	B)	<ul><li>Answer the following.</li><li>1) What are the applications of mobile computing?</li><li>2) Explain the term Medium Access Control.</li></ul>	06
Q.3	Ans A) B)	wer the following. What is multiplexing? Explain time division multiplexing scheme. Explain how the classic aloha and slotted aloha schemes are implemented.	14
Q.4	Ans A) B)	wer the following. Name the main elements of GSM system and describe their functions. Explain the data transfer from mobile node to a correspondent node and vice versa.	14
Q.5	Ans A) B)	<b>wer the following.</b> Explain the scheme MACA with example. Explain the functional architecture of IEEE802.11.	14
Q.6	Ans A) B)	wer the following. Explain the direct sequence spread spectrum. What is congestion control? Explain the mechanism slow start and fast recovery.	14
Q.7	Ans A) B)	<b>wer the following.</b> Explain android system architecture. How to manage your Wi-Fi using WifiManager android Wi-Fi connectivity service? Explain in brief.	14

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	N	I.C.A. (Semester - II) (Old) (CBCS) Examination Mar/Apr-2018	
ime	: 2½	Hours Max. Marks:	70
str	uctio	<ul> <li>ons: 1) Question No. 1 and 2 are compulsory.</li> <li>2) Attempt any 3 questions from Q. no. 3 to Q. no. 7</li> <li>3) Figures to the right indicate full marks.</li> </ul>	
		4) Use of calculator is allowed.	
.1	A)	<ul> <li>Choose correct alternatives.</li> <li>1) The process of computing the value of the function inside the given range is called</li> <li>2) The effect of error with the order of the differences.</li> <li>3) If f(0) = 1 and f(1)=3 then the unique polynomial of degree one is</li> <li>4) Trapezoidal rule is given by the formula</li> <li>5) The central difference operator δ<sub>3/2</sub> is defined by the relation</li> <li>6) Taylors series for y(x) around x = x<sub>0</sub> is given by</li> <li>7) The relation between ∇ and E is given by</li> <li>8) In Newton Raphson method the iterative formula to find <sup>1</sup>/<sub>N</sub> is given by</li> <li>9) Newton's backward difference interpolation formula is given by</li> </ul>	10
	B)	<ul> <li>Choose the correct alternative. (one mark each)</li> <li>1) First approximation to the root of the equation x<sup>3</sup> - 2x - 5 = 0 using method of false position is</li> <li>a) 2.05882</li> <li>b) 2.5882</li> <li>c) 2.15882</li> <li>d) 2.882</li> </ul>	
		<ul> <li>2) Which of the following is correct <ul> <li>a) ∇ - Δ = Δ∇</li> <li>b) ∇ - Δ = -Δ∇</li> <li>c) ∇ + Δ = -Δ∇</li> <li>d) ∇ + Δ = Δ∇</li> </ul> </li> <li>3) While applying Simpsons 1/3 rule the number of subintervals should be <ul> <li>a) Multiples of 5</li> <li>b) Odd</li> <li>c) Multiples of 3</li> <li>d) Even</li> </ul> </li> </ul>	
		4) If $f(x) = \frac{1}{x^2}$ then the value of first divided difference of the argument 2 and 3 is equal to a) -3/4 b) 5/36 c) -5/36 d) 2/3	
.2	<ul> <li>A) Write a note on absolute, relative and percentage error.</li> <li>B) Determine the value of y using Modified Euler method when x=0.1 given that y(0)=1, b=0.05 and y'=y<sup>2</sup> w</li> </ul>		
	C)	Prove that $e^{x} \left( u_{0} + x\Delta u_{0} + \frac{x^{2}}{2!}\Delta^{2}u_{0} + \cdots \right) = u_{0} + u_{1}x + u_{2}\frac{x^{2}}{2!} + \cdots$	03
	D)	Explain Bisection method.	04
.3	A)	Solve the system 2x+y+z=10, 3x+2y+3z=18, x+4y+9z=16 using Gauss	07

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# Q

elimination method. Evaluate  $\int_{4}^{16} lnx \, dx$  by Simpsons 1/3 rule by dividing the interval into six parts. B) 07



07

07

- **Q.4** A) Derive Newton's forward difference interpolation formula.
  - B) Reduce the matrix

$$\mathbf{A} = \begin{bmatrix} 1 & 3 & 4 \\ 3 & 2 & -1 \\ 4 & -1 & 1 \end{bmatrix}$$

to traditional form using Householder's method.

- Q.5 A) Derive Newton's general interpolation formula with divided differences. 07 B) The function y=sinx is tabulated as 07 Х 0  $\pi/4$  $\pi/2$ Y = sinx0 0.70711 1.0 Using Lagrange's interpolation formula, find the value of  $sin(\pi/6)$ Q.6 A) Show that Newton Raphson method converges quadratically. 07 Determine the value of y using Modified Euler method when x=0.1 given that 07 B) y(0)=1, h=0.05 and  $y' = x^2+y$
- Q.7 A) Show that

1.

$$\mu = \sqrt{1 + (1/4)\delta^2}$$
**07**

$$2. \ \delta = \nabla (1 - \nabla)^{-1/2}$$

**B)** Solve  $I = \int_0^1 \frac{1}{1+x} dx$  correct to three decimal places by the trapezoidal rule with h=0.125. **07**