

B.Sc. Semester III (General) Examination, 2018-19

COMPUTER SCIENCE

Course ID : 31510

Course Code : SPCSC-304SEC-1A(T)

Course Title : Office Automation Tools

Time: 1 Hour 15 Minutes

Full Marks: 25

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer *any five* questions: 1×5=5
 - (a) Name two office automation tools.
 - (b) Name some forms available in MS Word.
 - (c) What is table caption?
 - (d) Where figure caption is to be placed?
 - (e) What is ppt?
 - (f) What is spreadsheet cell?
 - (g) What is Macro?
 - (h) What do you mean by animation?

 2. Answer *any two* questions: 5×2=10
 - (a) Discuss word processor with respect to the following features:
Pages, images and tables
 - (b) Discuss spreadsheet with respect to the following features:
Charts and formula
 - (c) Discuss Power Point with respect to the following features:
Slides and animation
 - (d) State some points which you need to consider for making a power point presentation of WSS activity in your college. (Do not mention college name)

 3. Answer *any one* question: 10×1=10
 - (a) Discuss some features of MS Word in brief.
 - (b) Discuss some features of Power Point in brief.
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B.Sc. Semester III (General) Examination, 2018-19**COMPUTER SCIENCE****Course ID : 31510****Course Code : SPCSC-304SEC-1B(T)**

Course Title : Multimedia and Applications

Time: 1 Hour 15 Minutes**Full Marks: 25***The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer *any five* questions: 1×5=5
 - (a) What is interactive multimedia?
 - (b) What is animation?
 - (c) Give full form — GIF.
 - (d) What is Hypertext?
 - (e) Mention two image formats used in Multimedia.
 - (f) Give full form – PNG.
 - (g) Write name of two video file formats.
 - (h) What is MMS?

 2. Answer *any two* questions: 5×2=10
 - (a) Write a note on video files.
 - (b) What is MIDI? How does a basic MIDI message structured?
 - (c) Define wave format. How are 2-D animations classified?
 - (d) What is multimedia and hypermedia? Distinguish between these two concepts.

 3. Answer *any one* question: 10×1=10
 - (a) Describe about vector and Bitmap graphics briefly.
 - (b) Describe 2D and 3D animation technique briefly.
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B.Sc. Semester III (Honours) Examination, 2018-19**COMPUTER SCIENCE****Course ID : 31511****Course Code : SHCSC-301C-5(T)**

Course Title : Data Structure

Time: 1 Hour 15 Minutes**Full Marks: 25***The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer *any five* questions: 1×5=5
- (a) What is stack?
 - (b) What is tree?
 - (c) Define Linked-list.
 - (d) What is hashing?
 - (e) What is array?
 - (f) What is AVL tree?
 - (g) What is the best case time complexity of Bubble sort algorithm?
 - (h) What is the number of nodes in a complete binary tree of depth k?
2. Answer *any two* questions: 5×2=10
- (a) Write the PUSH() and POP() operation of a stack.
 - (b) Suppose an array A contains 6 elements as follows: 77, 33, 44, 11, 88, 22.
Apply selection sort algorithm to sort (ascending order)
 - (c) Write down the binary search algorithm.
 - (d) What are the advantages and disadvantages of linked-list over an array? Explain.
3. Answer *any one* question: 10×1=10
- (a) Write the algorithm to evaluate a post fin expression and using the algorithm evaluate the following expression:
P : 5, 6, 2, +, *, 12, 4, 1, - 6+4=10
 - (b) Given the pre-order and in-order sequence, draw the resultant binary tree and write its post-order traversal:
Pre-order : A B D G H E I C F J K
In-order : G D H B E I A C J F K
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B.Sc. Semester III (Honours) Examination, 2018-19

COMPUTER SCIENCE

Course ID : 31512

Course Code : SHCSC-302C-6(T)

Course Title : Operating System

Time: 1 Hour 15 Minutes

Full Marks: 25

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer *any five* questions: 1×5=5
 - (a) What is Operating System?
 - (b) What is Multiprogramming?
 - (c) What is time sharing?
 - (d) State the difference between kernel and shell of an operating system.
 - (e) What is a process?
 - (f) What do you mean by thread?
 - (g) What is file?
 - (h) What is virtual memory?

 2. Answer *any two* questions: 5×2=10
 - (a) Draw state/transition diagram for an ordinary process.
 - (b) Write a short note on demand paging.
 - (c) Describe segmentation in brief.
 - (d) What do you mean by internal and external fragmentation?

 3. Answer *any one* question: 10×1=10
 - (a) Discuss various services provided by an operating system in brief.
 - (b) Describe various conditions necessary for occurrence of deadlock in brief.
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B.Sc. Semester III (Honours) Examination, 2018-19

COMPUTER SCIENCE

Course Code : 31513

Course Code : SHCSC-303C-7(T)

Course Title : Computer Network

Time: 1 Hour 15 Minutes

Full Marks: 25

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer *any five* questions: 1×5=5
 - (a) What is packet?
 - (b) Define DNS.
 - (c) What is browser?
 - (d) What is topology?
 - (e) Write the full form of TDMA.
 - (f) Write full form of www.
 - (g) What is congestion?
 - (h) Write full form of HTTP.

 2. Answer *any two* questions: 5×2=10
 - (a) Write the advantages of Networking.
 - (b) Write short note on TCP/IP network model.
 - (c) Write short note on CSMA/CD protocol.
 - (d)
 - (i) Compare between circuit switching and packet switching technique.
 - (ii) Write down different types of network topology with examples. 2+3=5

 3. Answer *any one* question: 10×1=10
 - (a) Write down the working principle of different layers in ISO OSI model.
 - (b) Write short note on: 5×2=10
 - (i) IP
 - (ii) Wireless communication
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B.Sc. Semester III (Honours) Examination, 2018-19

COMPUTER SCIENCE

Course ID : 31514

Course Code : SHCSC-304GE-3A(T)

Course Title : Computer Networks and Internet Technology

Time: 1 Hour 15 Minutes

Full Marks: 25

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer *any five* questions: 1×5=5
 - (a) What is Networking?
 - (b) What is switch?
 - (c) What is browser?
 - (d) Write the full form of www.
 - (e) What is internet?
 - (f) What is FDM?
 - (g) What is the full form of HTML?
 - (h) What is hub?

 2. Answer *any two* questions: 5×2=10
 - (a) Write short note on FTP.
 - (b) Write short note on server and client.
 - (c) What are the HTML tags?
 - (d) What is Network and explain characteristics of Networks? 1+4=5

 3. Answer *any one* question: 10×1=10
 - (a) Write the differences among LAN, MAN and WAN. Specify the different areas where we can use LAN, MAN and WAN. Write on the applications of e-commerce. 10
 - (b) Write short note on guided media. Which media is best among all guided media? — Justify. 8+2=10
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SH-III/Computer Sc./304GE-3B(T)/19

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B.Sc. Semester III (Honours) Examination, 2018-19**COMPUTER SCIENCE****C : 31514****Course Code : SHCSC-304GE-3B(T)****Course Title : Multimedia and Application****Time: 1 Hour 15 Minutes****Full Marks: 25***The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer *any five* questions: 1×5=5
 - (a) What is Warping?
 - (b) Write full form of MIDI.
 - (c) What is Bitmap?
 - (d) Give one advantage of Digital video.
 - (e) Write full form of www.
 - (f) Define web browser.
 - (g) Write the name of graphics categories.
 - (h) What is MP3/MPEG format?

 2. Answer *any two* questions: 5×2=10
 - (a) Write the principles of Animation.
 - (b) Difference between analog and digital video. What is vector graphics?
 - (c) Describe about container and empty tag in HTML. Give example both tags.
 - (d) Write about Morphing.

 3. Answer *any one* question: 10×1=10
 - (a) Describe about Vector Drawing. How does Vector Drawing work?
 - (b) Describe 2D and 3D animation technique briefly.
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SH-III/Computer Sc./305/SEC-1A(T)/19

B.Sc. Semester III (Honours) Examination, 2018-19

COMPUTER SCIENCE

Course ID : 31515

Course Code : SHCSC-305SEC-1A(T)

Course Title : Programming in Python

Time: 1 Hour 15 Minutes

Full Marks: 25

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer *any five* questions: 1×5=5
 - (a) What are the different types of errors in programming?
 - (b) Write two advantages of flowchart.
 - (c) Write differences between top-down and bottom-up approach of programming.
 - (d) What is Docstring in Python?
 - (e) What is PUM?
 - (f) Write down two important features of Python.
 - (g) How will you convert an integer to octal in Python?
 - (h) What are different numeric data types available in Python?

 2. Answer *any two* questions: 5×2=10
 - (a) Differentiate between Python and Java.
 - (b) Write a program in Python to check a number is palindrome or not.
 - (c) Draw a flowchart to find GCD of two nos.
 - (d) Explain with example if and elif nested header in Python.

 3. Answer *any one* question: 10×1=10
 - (a) What is numeral literal? Give example. What is list? How lists differ from tuples? Explain the operator precedence of arithmetic operators in Python.
 - (b) What is a dictionary in Python? Give example. Write a Python program to display Fibonacci series and draw a flowchart for the same.
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SH-III/Computer Sc./305SEC-1B(T)/19 2

B.Sc. Semester III (Honours) Examination, 2018-19**COMPUTER SCIENCE****Course ID : 31515****Course Code : SHCSC-305SEC-1B(T)**

Course Title : B : Unix/Linux Programming

Time: 1 Hour 15 Minutes**Full Marks: 25***The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer *any five* questions: 1×5=5
- (a) What is Linux Kernel?
 - (b) What is LILO?
 - (c) Write full form and meaning of GUI.
 - (d) How can you determine the total memory used by Linux?
 - (e) What is the maximum length for any file name under Linux?
 - (f) What is Shell Script?
 - (g) What is Unix pwd command?
 - (h) Write the general format of Unix commands syntax.
2. Answer *any two* questions: 5×2=10
- (a) What are the purposes of following commands in Unix— chmod, chown, chgrp, gzip.
 - (b) Write a shell script in Unix to find sum of digits of a number.
 - (c) Explain basic components of Linux.
 - (d) What is CLI? Write advantages and disadvantages of it.
3. Answer *any one* question: 10×1=10
- (a) Explain some Linux Distros along with their usage.
 - (b) Explain Linux shell briefly. Write a shell script to find factorial of a number.
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B.Sc. Semester III (General) Examination, 2018-19

COMPUTER SCIENCE

Course ID : 31518

Course Code : SPCSC-301C-1C(T)

Course Title : Operating Systems

Time: 1 Hour 15 Minutes

Full Marks: 25

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer *any five* questions: 1×5=5
 - (a) Name two popular operating systems.
 - (b) What is batch processing?
 - (c) What do you mean by time sharing?
 - (d) What is the function of Kernel of an operating system?
 - (e) What is process?
 - (f) What do you mean by turnaround time of a process?
 - (g) What do you mean by a file?
 - (h) What do you mean by the critical section of a process?

 2. Answer *any two* questions: 5×2=10
 - (a) Discuss, in brief, the different states in the life cycle of a process.
 - (b) Write a short note on paging technique.
 - (c) Write a short note on segmentation.
 - (d) Discuss pre-emptive and non-pre-emptive scheduling in brief.

 3. Answer *any one* question: 10×1=10
 - (a) Discuss various services provided by an operating system in brief.
 - (b) Explain any two CPV scheduling algorithms with suitable examples.
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SP-III/Computer Sc./304SEC-1A(P)/19

B.Sc. Semester III (General) Practical Examination, 2018-19

COMPUTER SCIENCE

Course ID : 31520

Course Code : SPCSC-304SEC-1A(P)

Course Title : Office Automation Tools

Time: 2 Hours

Full Marks: 15

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

(LNB + VIVA = 05, Experiment = 10)

1. Perform *any one* experiment: 10×1=10
- (a) Create your biodata in MS Word with table(s).
 - (b) Create a document in MS Word to display items and stocks using lists for displaying in front of a ration shop.
 - (c) Create a spreadsheet for a class of students, containing the following fields:
Roll No, Name, Date of Birth and Marks.
Then sort the sheet on the basis of marks.
 - (d) Prepare a Power Point presentation for works undertaken by NCC units of your college (Do not mention college name).
 - (e) Prepare a Power Point presentation for publicity of your child-age school.
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SP-III/Computer Sc./304SEC-1B(P)/19

B.Sc. Semester III (General) Practical Examination, 2018-19

COMPUTER SCIENCE

Course ID : 31520

Course Code : SPCSC-304SEC-1B(P)

Course Title : Multimedia and Applications LAB

Time: 2 Hours

Full Marks: 15

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

(LNB + VIVA = 05, Experiment = 10)

1. Perform *any one*: 10×1=10
- (a) Create an animation to indicate a ball bouncing on steps.
 - (b) Draw an animation to show two boats sailing in river.
 - (c) To design a visiting card containing at least one graphic and text information.
 - (d) Draw an animation to show cartoon with a message.
 - (e) Draw an animation to show sunrise and sunset.
 - (f) Draw an animation to help to teach a poem or a song.
 - (g) Draw an animation to show a fainting banana.
 - (h) Create an animation to show the ripple effect.
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B.Sc. Semester III (Honours) Practical Examination, 2018-19

COMPUTER SCIENCE

Course ID : 31521

Course Code : SHCSC-301C-5(P)

Course Title : Data Structures Lab

Time: 2 Hours

Full Marks: 15

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

(LNB + VIVA = 05, Experiment = 10)

Attempt *any one*.

1. Perform stack operation using Linked-list implementation.
2. Write a program to calculate GCD of 2 numbers.
3. Write a program to display Fibonacci series.
4. Write a program to add two polynomials using linked-lists.
5. Write a program to implement lower triangular matrix using one-dimensional array.
6. Write a program to display its preorder, postorder and inorder traversals of a BST.
7. Write a program to calculate factorial of a number.
8. Implement doubly linked-list using template.
9. Write a program to reverse the order of the elements in the stack using additional stack.
10. Write a program to create a BST and then search an element in the BST.

B.Sc. Semester III (Honours) Practical Examination, 2018-19

COMPUTER SCIENCE

Course ID : 31522

Course Code : SHCSC-302C-6(P)

Course Title : Operating Systems

Time: 2 Hours

Full Marks: 15

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

(LNB + VIVA = 05, Experiment = 10)

1. Perform *any one* experiment: 10×1=10
- (a) Write a C-program to implement priority based CPU scheduling algorithm.
 - (b) Write a C-program to implement FCFS scheduling algorithm.
 - (c) Write a C-program to implement Round-Robin CPU scheduling algorithm.
 - (d) Write a C-program to implement shortest-job-first CPU scheduling algorithm.
 - (e) Write a C-program to implement First-fit, Best-fit and Worst-fit scheduling algorithm.
 - (f) Write a Shell script to find the sum of digits of a given number.
 - (g) Write a Shell script to find the GCD of two numbers.
 - (h) Write a Shell script to check whether a number is prime or not.
 - (i) Write a Shell script to generate Fibonacci series.
 - (j) Write a Shell script to compute the factorial of a given number.
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B.Sc. Semester III (Honours) Practical Examination, 2018-19

COMPUTER SCIENCE

Course ID : 31523

Course Code : SHCSC-303C-7(P)

Course Title : Computer Network Practical

Time: 2 Hours

Full Marks: 15

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

(LNB + VIVA = 05, Practical = 10)

Attempt *any one*.

10×1=10

1. Simulate Cyclic Redundancy Check (CRC) error detection algorithm for noisy channel.
2. Simulate and implement stop and wait protocol for noisy channel.
3. Simulate and implement go back n sliding window protocol.
4. Simulate and implement selective repeat sliding window protocol.
5. Simulate and implement distance vector routing algorithm.
6. Simulate and implement Dijkstra Algorithm for shortest path routing.

B.Sc. Semester III (Honours) Practical Examination, 2018-19**COMPUTER SCIENCE****Course ID : 31524****Course Code : SHCSC-304GE-3A(P)****Course Title : Computer Networks and Internet Technology****Time: 2 Hours****Full Marks: 15***The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words
as far as practicable.*

(Viva + LNB = 05, Practical = 10)

Attempt *any one*.

10×1=10

1. Create HTML document with ordered and unordered lists, inserting images, Internal and external linking.
2. Create an HTML document with table to show your class routine.
3. Create an HTML document with frames as follows:

About department 1 department 2 department 3	This frame would show the content according to the line clicked on the left frame
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4. Create a website of 6 -7 pages with different effects (like: lists, frame, internal link, external link, image etc.)
5. Print the largest of 3 numbers using Javascript.
6. Create an HTML document (having multiple frames) as follows:

Frame 1	
Frame 2	Frame 3

7. Create a form using HTML with text box, option/radio buttons, check boxes, reset and submit button.
8. Find the factorial of a number n using Javascript.
9. Read n numbers and then count the number of negative, positive numbers and zeroes in the list.
10. Print a table of numbers from 5 to 15 and find out the squares using Javascript.

B.Sc. Semester III (Honours) Practical Examination, 2018-19

COMPUTER SCIENCE

Course ID : 31524

Course Code : SHCSC-304GE-3B(P)

Course Title : Multimedia and Applications Lab

Time: 2 Hours

Full Marks: 15

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

(LNB + VIVA = 05, Experiment = 10)

Perform *any one*.

10×1=10

1. Create an animation in which text Hello-gets converted into Goo Bye. (using motion/Shape tweening)
2. Create an animation to indicate a ball bouncing on steps.
3. Create an animation with the following features.

WELCOME

- (i) Letters should appear one by one.
 - (ii) The fill colour of the text should change to a different color after the display of the full word.
4. Create a scene to show the sunrise.
 5. Create an animation having five images having fade-in-fade-out effect.
 6. To design a visiting card containing atleast one graphic and text information.
 7. Create an animation to show the ripple effect.
 8. Create a cover page for the book in your subject area. Plan your own Design.

B.Sc. Semester III (Honours) Practical Examination, 2018-19**COMPUTER SCIENCE****Course ID : 31525****Course Code : SHCSC-305SEC-1A(P)**

Course Title : Programming in Python

Time: 2 Hours**Full Marks: 15***The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words
as far as practicable.*

(LNB + VIVA = 05, Experiment = 10)

1. Perform any one experiment: 10×1=10

(a) Write a Program in Python to calculate GCD & LCM of two nos.

(b) Write a Program in Python to evaluate the series

$$X = 1 + \frac{2}{2!} + \frac{3}{3!} + \dots + \frac{n}{n!}$$

(c) Write a program in Python to check whether a no. is Fibonacci term or not.

(d) Write a menu driven program in Python to add, subtract, multiply and divide two complex numbers.

(e) Write a program in Python to display a triangular pattern as follows:

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1
2 3 4
5 6 7 8 9
10 11 12 13 14 15

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(f) Write a program in Python to display first 100 prime numbers.

(g) Write a program to find prime factors of a number.

B.Sc. Semester III (Honours) Practical Examination, 2018-19

COMPUTER SCIENCE

Course ID : 31525

Course Code : SHCSC-305SEC-1B(P)

Course Title : Unix/Linux programming

Time: 2 Hours

Full Marks: 15

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

(LNB + VIVA = 05, Experiment = 10)

1. Perform *any one* experiment: 10×1=10
- (a) Write a Shell script to display multiplication table of a number input through keyboard.
 - (b) Write a Shell script to perform basic tasks of a calculator.
 - (c) Write a Shell script to accept a login name, if not valid login name display message-entered login name is invalid.
 - (d) Write a Shell script to check a number is Armstrong or not.
 - (e) Write a Shell script to display prime nos. from 1 to 100.
 - (f) Write a Shell script to calculate power of one number raise to the another no. using command line arguments.
 - (g) Write a Shell script to display prime factors of a number using command line argument.
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B.Sc. Semester III (General) Practical Examination, 2018-19

COMPUTER SCIENCE

Course ID : 31528

Course Code : SPCSC-301C-1C(P)

Course Title : Operating System

Time: 2 Hours

Full Marks: 15

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

(LNB + VIVA = 05, Experiment = 10)

1. Perform *any one* experiment: 10×1=10
- (a) Write a C-program to calculate average waiting time in FCFS scheduling algorithm.
 - (b) Write a C-program to calculate average waiting time in Round-Robin scheduling algorithm.
 - (c) Write a C-program to calculate average turnaround time in priority based scheduling algorithm.
 - (d) Write a C-program to implement first-fit, best-fit and worst-fit scheduling algorithm.
 - (e) Write a C-program to calculate average turnaround time in shortest-job-first scheduling algorithm.
 - (f) Write a Shell script to generate Fibonacci series.
 - (g) Write a Shell script to find LCM of two numbers.
 - (h) Write a Shell script for factorial computation.
 - (i) Write a Shell script to find sum of digits of a given number.
 - (j) Write a Shell script to find the power of a given number.
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