

FIRST SEMESTER BSc. COMPUTER SCIENCE MODEL EXAMINATION, JANUARY 2020

BCS1B01 COMPUTER FUNDAMMENTALS & HTML

Maximum Marks: 60

TIME: 2 Hours

SECTION A: answer the following questions. Each carries 2 marks (Ceiling 20 marks)

1. State De Morgan's theorem.
2. Write a short note on cache memory.
3. What are the features of a good language?
4. Briefly explain about Language translators
5. Describe Top down Design in programming.
6. Explain web server and web hosting.
7. What are the background styling rules in CSS?
8. Explain about table tags with its attributes.
9. What is an Algorithm?
10. Explain the principle of duality with example.
11. What do you mean by XHTML?
12. Distinguish between RAM and ROM.

SECTION B: answer the following questions. Each carries 5 marks (Ceiling 30 marks)

13. Simplify the Boolean expression in SOP form using K map

$$F = \sum(0, 2, 5, 7, 8, 13, 15)$$

14. A) Convert 256_{10} to binary, Octal, Hexadecimal number systems.
B) Write 4-bit BCD code for 8579_{10}
15. Write algorithm for finding the roots of a quadratic equations
16. Explain the basic formatting tags in HTML with example.
17. Explain about input and output devices
18. Explain any 3 secondary storage devices
19. What is flow chart? What are the properties of flowcharts? Explain basic flowchart symbols.
20. Explain different types of style sheets.

SECTION B: answer any 1 question. Each carries 10 marks

21. Explain the different types of computer codes with examples.
22. What are Logic Gates? Explain the following logic gates with circuit diagram.

40 copy.

Name : _____

Roll No. : _____

FIRST B.Sc. COMPUTER SCIENCE FIRST INTERNAL 2021

STA1C01- Introductory Statistics

Time - 2hrs

Max Marks - 50

Part A

All questions are compulsory. Each question carry 2 marks (20 marks)

1. What are time series data? (2)
2. Write any two methods of collecting primary data? (2)
3. Define geometric mean for a raw data? (2)
4. Give any two applications of statistics? (2)
5. Give any two abuses of statistics? (2)
6. Write the empirical relation of mean, median and mode. (2)
7. Define the mode of a continuous frequency distribution? (2)
8. Define an ogive curve? (2)
9. Define the range and coefficient of range of a data set ? (2)
10. Let the average mark of 40 students of class A be 38, the average mark of 60 students of another class B is 42. What is the average mark of the combined group of 100 students? (2)

Part B

Answer any 4 questions. Each question carry 5 marks (20 marks)

11. Describe the desirable properties of a good measure of central tendency? (5)

12. What are the points to be borne in mind of a investigator while drafting a good questionnaire or schedule? (5)
13. Write any 5 sources of secondary data? (5)
14. Calculate the geometric mean and harmonic mean for the following data (5)

Value	0-10	10-20	20-30	30-40	40-50
Frequency	8	12	20	6	4

15. Construct a frequency curve for the following data (5)

Value	0-10	10-20	20-30	30-40	40-50	50-60
Frequency	3	6	15	9	5	2

16. Calculate the mean deviation from median and corresponding relative measure for the following data (5)

20 23 30 32 46 51 56 57 57 78

Part C

Answer any 1 questions. Each question carry 10 marks (10 marks)

17. Calculate the Quartile deviation(QD) and coefficient of Quartile deviation for the following data (10)

Value	0-9	10-19	20-29	30-39	40-49	50-59
Frequency	3	9	15	30	18	5

18. The runs scored by two players in 10 innings are given below (10)

Player A	25	65	45	0	50	100	35	80	10	90
Player B	45	55	50	35	50	65	45	60	40	60

Who is more consistent?

Answer all questions

Section A (Answer all questions, each question carry 2 marks)

1. Suppose $\lim_{x \rightarrow c} f(x) = 5$ and $\lim_{x \rightarrow c} g(x) = -2$. Find
 - (c) $\lim_{x \rightarrow c} f(x)g(x)$
 - (d) $\lim_{x \rightarrow c} f(x)/g(x)$
2. If $\lim_{x \rightarrow 4} \frac{f(x)-5}{x-2} = 1$, find $\lim_{x \rightarrow 4} f(x)$
3. Find $\lim_{x \rightarrow 9} (\sqrt{x} - 3)/(x - 9)$
4. Define limit.
5. Find the slope of the tangent line to the graph of the function $(x^2 + 1)(x^3 - 1)$ at $x_0 = 0$
6. Verify chain rule for $f(u)$ and $g(x)$ as given below
 $f(u) = \sqrt{u}$ and $g(x) = x^2$
7. Suppose that $(x^2)/(x+y^2) = (y^2)/2$ find dy/dx when $x=2$ & $y=2^{1/2}$
8. Find dy/dx if $x = at + b$, $y = ct + d$
9. Find the derivative of $y = x^2$ using the definition of derivative.
10. Find $dy/dx =$ if $y = \cos(\sqrt{1 + \cos x})$.

Section B (Answer all questions, each question carry 5 marks)

16. Find the first and second derivatives of the functions

b) $f(x) = -x^2 + 3$ b) $g(x) = (2x+5)/(3x-2)$

17. Calculate the approximate value of the following using the linear approximation $(1.009)^8$

18. Sand falls onto a conical pile at the rate of 10cc per second. The radius of the pile is always equal to half of its altitude. How fast the altitude of the pile is increasing when it is 150cms.

19. Find the ant derivative of the function

- $[(1/x^2) + (2/x^3) + (3/x^4) + (4/x^5)]$

Section C (Answer all questions, each question carry 10 marks)

20. (a) Find an equation for the tangent to the curve

$y = x + (2/x)$ at (3,4)

(b) Find the second derivative of $p(x) = [(x^3+3)/(12x)] [(x^4-1)/(x^3)]$

(c) At time t the position of a body moving along the x-axis is $x = t^3 - 6t^2 + 9t$ meters. Find the body's acceleration at each time the velocity is zero.

B.Sc Computer Science - Statistics 2nd Semester Internal exam

Probability theory

* Required

1. NAME *

2. ROLL NO. *

This section consist of MCQ and fill in the blank questions

Section - A

3. Find "c" if the pdf of X is $f(x) = 1/c$ when $0 < x < 2$ *

2 points

Mark only one oval.

1

0

2

3

4. The total area under a probability curve is *

1 point

1 point

5. The distribution function $F(x)$ lies between *

Mark only one oval.

0 and 1

-1 and 0

-1 and 1

2 and 2

This section consist of MCQ's

Section -B

Four unbiased coins are tossed. Let X denote the number of head minus the number of tails .
Answer the following

6. What are the possible values of X (more than one correct answer is there) *

1 point

Check all that apply.

-4

-3

-2

0

2

4

3

7. What is the value of $P(X=-4)$ *

1 point

Mark only one oval.

$1/16$

$3/4$

$6/16$

$2/4$

8. What is the value of $P(X=2)$ *

1 point

Mark only one oval.

2/16

3/4

4/16

1/4

9. What is the value of $P(X=4)$ *

1 point

Mark only one oval.

1/16

2/4

4/16

3/4

10. What is the value of $P(-3 < X < 3.5)$ *

2 points

Mark only one oval.

6/16

8/4

14/16

10/16

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SECOND SEMESTER
FIRST INTERNAL EXAMINATION
MATHEMATICS.

Time: $1\frac{1}{2}$ hour

Total: ~~10~~ ²⁵ Marks

Answer all Questions

1) Find $\frac{dr}{dt}$, if $r(s) = \cos 2s \hat{i} + \sin 2s \hat{j} + e^{-3s} \hat{k}$
Where $s = t^4$. (5)

2) Let $r_1(t) = \cos t \hat{i} + \sin t \hat{j} + t \hat{k}$ and
 $r_2(t) = \hat{i} + t \hat{k}$. Then Verify, (10)

a) $\frac{d}{dt} [r_1(t) \cdot r_2(t)] = \frac{dr_1}{dt} \cdot r_2(t) + r_1(t) \cdot \frac{dr_2}{dt}$

b) $\frac{d}{dt} [r_1(t) \times r_2(t)] = \frac{dr_1}{dt} \times r_2(t) + r_1(t) \times \frac{dr_2}{dt}$

3) Find the parametric equation of for the line that is tangent to the curve (5)

$r(t) = \sin t \hat{i} + (t^2 - \cos t) \hat{j} + e^t \hat{k}$ at $t=0$

4) Find the Value of a if $u = (axy - z^2) \hat{i} + (x^2 + 2yz) \hat{j} + (y^2 - axz) \hat{k}$ is irrotational (5)

THIRD SEMESTER BSc DEGREE EXAMINATION, NOVEMBER 2020
PYTHON PROGRAMMING

Time: 2.5 Hours

Maximum: 80 Marks

SECTION A: Answer the following questions. Each carries *two* marks
(Ceiling 25)

1. Write steps to run a Python script.
2. What are membership operators .Give example
3. Write the rules for choosing variables in Python?
4. Write a python program to read input using REP(Shell)and display the output
5. What is the purpose of global keyword in Python?
6. What are mutable and immutable types?
7. Compare fruitful and void functions?
8. Why is * is called string repetition operator?
9. Define the scope and life time of a variable in python?
10. What is cloning of List?
11. How to access values in dictionary?
12. Define implicit conversion.?
13. Give an example for local and global scope of the variables in a function.
14. What is the use of all(), any(), cmp() and sorted() in dictionary?
15. What are the features of tuple data structure?

SECTION B: Answer the following questions. Each carries *five* marks
(Ceiling 35)

16. What is Python? Describe its features and applications?
17. What are IDLE usability features?
18. Explain identifiers and keywords used in Python?
19. What are the different loops available in Python
20. What are the different types of arguments in a function?
21. Write a python program to print all Prime numbers upto 100
22. What type of parameter passing supported in Python.Justify you answer with example
23. Briefly explain Set in Python with example?

SECTION C: Answer any *two* questions (2 × 10 =20 Marks)

24. Describe Arithmetic Operators, Comparison Operators, Logical Operators and Bitwise operators with examples
25. Compare List and Tuple?
26. List some of useful Math methods/Functions
b)Write a Python script to write whether a string is palindrome or not
27. Explain List accessing methods and List comprehension?

Mark
SHOWS N(S)

B.Sc Computer science -Statistics 3rd Semester First Internal

Probability Distribution and Sampling Theory

* Required

1. Name *

2. Roll No. *

Section-B

8 questions are thereall questions are compulsory

3. If X follows Uniform[a,b] then its moment generating function is *

1 point

Mark only one oval.

$$\frac{1}{(b-a)}$$

$$\frac{(e^{tb} - e^{ta})}{t(b-a)}$$

Option 1

Option 2

4. If X follows $N(5, 4)$, then $P(X > 5)$ is *

Mark Only one oval.

- 0
- 0.25
- 0.50
- 1

5. The moment generating function of a random variable X follows $N(0, 4)$ is *

2 points

Mark only one oval.

$$e^{2t^2}$$

$$e^{\frac{t^2}{2}}$$

Option 1

Option 2

$$e^{-2t^2}$$

$$e^{-\frac{t^2}{2}}$$

Option 3

Option 4

6. X follows $N(0,1)$ and Y follows $N(0,1)$, X and Y are independent. Then $Z = X + Y$ follows * 2 points

Mark only one oval.

- $N(0,4)$
 $N(0,2)$
 $N(0, 16)$
 $N(1,1)$

7. Which of the following probability distribution have lack of memory property * 1 point

Mark only one oval.

- Beta distribution of 1st kind
 Gamma distribution
 Beta distribution of 2nd kind
 Exponential distribution

8. For which of the following distribution the mean does not exist ? * 1 point

Mark only one oval.

- Cauchy distribution
 Pareto distribution
 Lognormal distribution
 Normal(0,1)

9. X is a standard normal random variable and $P(0 < X < 1.13) = 0.37$. Then $P(|X| < 1.13)$ is * 1 point

Mark only one oval.

- 0.74
 0.37
 0.63
 0.185

10. If X follows standard normal distribution then its mean and variance is given by * 2 points

Mark only one oval.

mean = 1 , variance = 0

mean = 0, variance = 0

mean = 1, variance = 1

mean = 0, variance = 1

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FOURTH SEMESTER B.Sc DEGREE EXAMINATION march 2021
MICROPROCESSORS ARCHITECTURE AND PROGRAMMING

Time: 2hrs

Maximum: 50 marks

SECTION A: Answer the following questions. Each carries *two* marks
(Ceiling 20)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.

1. What is bus in Microprocessor?
2. What are the functions of HOLD and HLDA signals in 8085?
3. Compare RAM and ROM?
4. Write an 8085 program to add two 8 bit numbers?
5. Compare HLT and NOP instruction?
6. List any 4 data transfer instructions in 8085?
7. What is machine cycle?
8. What are the two major part of an instruction?
9. What is meant by memory mapped I/O in 8085?
10. Differentiate CALL and RET instructions?
11. Flag structure of 8085?

SECTION B: Answer the following questions. Each carries *five* marks
(Ceiling 20)

- 12.
- 13.
- 14.
- 15.
- 16.

12. Explain the general purpose registers and special purpose registers in 8085?
13. What you mean by addressing modes? Discuss the various addressing modes of 8085?
14. Explain the general architecture of a computer?
15. Explain the memory Read machine cycle of 8085?
16. Explain the different processor control instructions in 8085?

SECTION C: Answer any *one* question (1 × 10 =10 Marks)

- 17.
- 18.

17. Explain the pin configuration of 8085 with a diagram?
18. With example explain the various arithmetic and logical instructions in 8085?

IV SEMESTER B.Sc. COMPUTER SCIENCE

DBMS INTERNAL EXAM MARCH 2021

TOTAL: 40 Marks

TIME: 2HRS

Answer all questions

- 1/ What is data independence? (2mark)
- 2/ Differentiate relational schema and relational instance? (2mark)
3. Define Entity set? (1mark).
4. Explain about ER diagram with example? (5marks)
5. Explain three level schema architecture in detail? (5 marks)
- 6.a) Explain duties of DBA? (5marks)

OR

- b) Explain about DML statements?
7. Explain different relational algebraic operations in detail? (10 marks)
- 8/ Define DBMS? What are advantages of DBMS? (10 marks)

Time: 1 hour 30 minutes

Marks : 40

1. Find $L^{-1} (a / (s^2 - a^2))$ (1mark)
2. What do you mean by Convolution? (1 mark)
3. State the Existence and Uniqueness Theorem for I.V.P. (2 marks)
4. Solve $y'' - y' - 2y = 0$. (2 marks)
5. Find a basis for the solution of DE $y' + y = 0$. (2 marks)
6. Find $L (e^{-at} \cos \beta t)$. (2 marks)
7. Solve $(4x^2 D^2 + 12xD + 3) y = 0$. (5 marks)
8. Find a general solution of the differential equation $y'' - 2y' + 5y = 5x^3 - 6x^2 + 6x$. (5 marks)
9. Using the method of separation of variables find product solutions of $u_x = 2u_y + u$. (5 marks)
10. Find inverse Laplace transform of $\frac{s}{(s^2 + \alpha^2)^2}$ (5 marks)
11. Find the Fourier series of the function f defined by $f(x) = \begin{cases} 0, & -2 < x < 0 \\ 1, & 0 < x < 2 \end{cases}$

(10 marks)

FIFTH SEMESTER BSc DEGREE EXAMINATION, NOVEMBER 2020
JAVA PROGRAMMING

Time: 3 hours

Maximum Marks: 80

SECTION A: Answer *all* questions. Each carries 1 mark

1. What is JVM?
2. What is Applet?
3. Define a class?
4. What is super in Java?
5. What you mean by inheritance?
6. What does a overriding a method mean?
7. What is final variable?
8. Which method is used to pass a parameter to applet?
9. Which method is used to access members of an object?
10. List any methods in Java I/O file class?

(10 × 1=10 Marks)

SECTION B: Answer *all* questions. Each carries 2 marks

11. Explain the derived data types in Java?
12. Define constructor and destructor?
13. Differentiate between process and thread?
14. Compare private and protected access specifiers in Java?
15. List any 4 listener classes in Java?
16. Differentiate between window and frame?
17. What is the importance of Java API?
18. Write difference between Swing and AWT components?

(8 × 2=16 Marks)

SECTION C: Answer any *six* questions. Each carries 4 marks

19. Compare object oriented programming and procedure programming?
20. What is an interface and how an interface can be implemented?
21. Explain 4 layout messengers in AWT?
22. Explain file streams?
23. What is an exception? How Java handles an exceptions?
24. Explain the life cycle of an Applet programming?
25. Write a short note on store() and Load() method in Java.util properties class?
26. What is synchronisation and how it is implemented in Java?
27. Explain how a database can be accessed using JDBC?

(6 × 4=24 Marks)

SECTION D: Answer any *three* questions. Each carries 10 marks

28. Explain control structures with example?
29. State the different ways of passing parameters to a method in Java. Illustrate with example?
30. Explain the different JDBC driver implementations in Java?
31. In how many ways a thread can be created in Java? Explain with example
32. Explain the important features of object oriented programming?

(3 × 10=30 Marks)

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FIFTH SEMESTER B.C.A DEGREE EXAMINATION, NOVEMBER 2020
: WEB PROGRAMMING USING PHP

Time: 3 hours

Maximum Marks: 80

SECTION A: Answer *all* questions. Each carries 1 mark

1. Define DNS?
2. Define web browser?
3. What you mean by onBLur Java script event?
4. What is comment in PHP?
5. What is the use of <link> tag?
6. What you mean by active documents?
7. WAMP stands for?
8. Define AJAX?
9. What you mean by bounded loops?
10. What is server side scripting?

(10 × 1=10 Marks)

SECTION B: Answer *all* questions. Each carries 2 marks

11. What is difference between FOR and FOREACH in PHP?
12. Differentiate echo and print commands?
13. What is the role of web server?
14. What is the use of GET and POST method in PHP?
15. Compare frames and frameset in HTML?
16. What are superglobal arrays?
17. Explain the features of PostgreSQL?
18. What is style sheet?

(8 × 2=16 Marks)

SECTION C: Answer any *six* questions. Each carries 4 marks

19. Explain the List () functions in PHP?
20. What are the different functions performed by a web browser?
21. Briefly explain logical operators in PHP?
22. Explain the user defined functions in Java Script?
23. Explain Anchor tag with example?
24. Briefly explain OnLoad () with example?
25. Explain any 4 string handling functions in PHP?
26. Explain cookies with example?
27. Explain the implementation of Ajax in PHP?

(6 × 4=24 Marks)

SECTION D: Answer any *three* questions. Each carries 10 marks

28. Explain the various types operators in Java Script?
29. Briefly explain HLML 5 input tags?
30. Explain array constructs in PHP?
31. Explain the different data types in POSTgreSQL? How can we execute PostgreSQL statements in PHP?
32. Briefly explain CSS positioning in detail?

(3 × 10=30 Marks)

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, February 2020
II internal : COMPUTER NETWORKS

Time: 2 hours

Maximum Marks: 20

PART A : Answer all questions. Each carries 2 marks

1. Define topology .List out different network topologies
2. What is aloha?
3. Write the functions of Router?
4. Compare uncasting and multicasting?
5. What is FTP?

(5 × 2=10 Marks)

PART B: Answer any 4 questions. Each carries 10 marks

- 6 Compare the architecture of ISO-OSI reference model and TCP/IP reference model
7. What is CRC? If the generating polynomial for CRC code is X^4+X^3+1 and message word is 11110000, determine check bits and coded word
- 8 Compare and contrast IPV4 and IPV6 addressing scheme?
- 9 What is E-mail? Explain the architecture and services provided by E-mail
- 10 Explain RSA algorithm with example?

(4 × 10=40 Marks)

SIXTH SEMESTER Bsc DEGREE EXAMINATION, January 2020
I Internal OPERATING SYSTEMS

Time: 2 hours

Maximum Marks: 50

PART a: Answer all questions. Each carries 2 marks

1. What are the various functions of an Operating System?
2. What is PCB?
3. What is the difference between binary and counting Semaphore?
4. What is meant by demand paging?
5. Write a short note on free space management?

(5 × 2=10 Marks)

PART b: Answer any 5 questions. Each carries 4 marks

6. What are the characteristics of real time Operating system?
7. Write a short note on POST?
8. Explain any two primitive semaphore operations?
9. Explain the conditions for Deadlock. How Deadlock can be described in terms of resource allocation graph?
10. Explain the concepts of files and directories. What are the important attributes of files?
11. Explain the various mechanisms available for implementing security in an Operating System?
12. Write a short note on virtual memory?

(5 × 4=20 Marks)

PART c: Answer any 2 questions. Each carries 10 marks

13. Compare the features of Multiprogramming and Time sharing Operating Systems?
14. Draw the process transition diagram and explain?
15. Compare Preemptive and non-preemptive scheduling algorithms?

(2 × 10=20 Marks)

Fourth Semester M Sc Degree First Internal Examination 2020-21

Storage Area Network

Time: 2 hours

Marks: 30

Each question carries 5 marks

- 1. What is the need for storage networks?**
- 2. List out the types of SAN and its features?**
- 3. List the different SAN topologies?**
- 4. Compare SNMP and HTTP**
- 5. Discuss the components of a SAN**
- 6. Describe the architecture of Storage Area Network**

Fourth Semester M.Sc Degree First Internal Examination 2020-21

System security

Time: 2 hours

Marks: 305

Each question carries 5 marks. Attend any 5.

1. What is CIA?
2. What are network security attacks?
3. Explain different types of system security problems?
4. Explain Non-malicious program code?
5. Write short notes on Brain virus?
6. Explain hazard analysis?

Each question carries 10marks.Attend any one.

7. Write an essay on computer criminals?
8. Write short notes on
 1. Program security.
 2. Fixing fault.
 3. Unexpected behavior
 4. Buffer overflow.

**THIRD SEMESTER M.SC DEGREE FIRST INTERNAL EXAMINATION
November 2020**

COMPUTER GRAPHICS

Time: 2 hours

MARKS: 35

Each question carries 5 marks.

1. Define computer Graphics package?
2. Write in details about Random scan Displays?
3. Explain working principle of CRT monitors?
4. What are Raster scan displays?
5. Write short note on pixel, Bitmap, frame buffer?

Each question carries 10marks.Attend any one.

6. DDA Algorithm with example?
7. Brenham's circle generating algorithm with example?

FIRST SEMESTER M.Sc. COMPUTER SCIENCE
SECOND INTERNAL EXAM 2020
ART OF PROGRAMMING METHODOLOGY

TIME:2Hrs

TOTAL MARK:30

Answer all question each carriers 2 marks

1. Differentiate entry controlled and exit control loop?
2. What is function prototype?
3. Write notes on typecasting?
4. What is the output of the following program

```
main()
{
int i=10;
printf(“%d...” , ++i++ );
printf(“%d”, ++i);
}
```

5. Write a c program to swap two integer numbers without using the **temporary variable.**

Answer all question each carries 5 marks

6. Explain the difference between break and continue statements with examples.
7. Write a program to find the sum of digits of an integer number entered by the user.

Answer all question each carries 10 marks

8. a) Explain with example passing of arrays to function.?
b) Write a program in C to sort in ascending order integer elements of a one-dimensional array.
9. a) Write a program to create a file and display its contents. Assume suitable data.?
b) Explain different file handling functions in detail?