GOVT. POLYTECHNIC, AMRAVATI.

(An Autonomous Institute of Govt. of Maharashtra)

Write Identity Code

TERM END EXAMINATION
WINTER- 2018

PROGRAMME:DIPLOMA IN COMPUTER ENGINEERING

COURSE CODE & ITS TITLE : CM3908 MICROPROCESSOR & APPLICATION

Time Allowed : 03 Hrs **Marks: 80**

Instructions:

1. Write your Identity Code Number on question paper.
2. All questions are compulsory.
3. Illustrate your answers with neat sketches wherever necessary.
4. Use of non-programmable calculator is permissible.
5. Figures to the right indicate full marks.
6. Assume suitable additional data, - if necessary – and state the assumptions made.
7. Each sub-question in a question carries equal marks unless otherwise specified.

Marks

Q.1. Attempt any **TEN** **20**

a) Calculate the offset address where physical address is 155A5H & segment address is 1050 H.

b) State the use of accumulator register in 8085.

c) What is interrupt? State its types.

d) Write the functions of Address bus & data bus in 8085 microprocessor.

e) Enlist the assembly language program development tools.

f) Write syntax & example of ADC instruction in 8086 microprocessor.

g) State functions of LAHF & SAHF instruction in 8086 μp.

h) Identify the types of addressing mode used in following instruction.

i) MOV AX, BX

ii) MOV AX, [SI]

i) List out Rotate instructions.

j) Write the use of "DQ & 'DW' assembly directives.

k) State meaning of i) Software ii) Hardware

l) What is Interrupt service procedure?

m) State use of address decoder.

n) State the different between LDS & LES instructions.

Q.2. Attempt any **THREE** **12**

a) Explain evolution of microprocessor.

b) Compare 8086 & 8088 microprocessor.

c) Explain machine control instructions.

d) Draw & explain 8086 minimum mode Read cycle with timing.

e) Draw & explain the functioning of Interrupt vector table.

Q.3. Attempt any **THREE.** **12**

a) Explain the salient features of 8085 microprocessor.

b) Write an assembly language program to find the factorial of the number.

c) What is interrupt? Explain its types.

d) Explain 8086 minimum mode pins.

e) Explain assembly language programming development tools.

Q.4. Attempt any **THREE.** **12**

a) Draw & explain the ADC 0808 convertor.

b) Draw & explain the 8086 maximum mode system design.

c) Explain how fetching & execution of an instruction done in 8086 microprocessor.

d) Explain the following assembly directives with example.

i) DB ii) PROC iii) EQU iv) ENDS

e) Explain following term

i) Distributed processing ii) Multiprocessing.

Q.5. Attempt any **TWO.** **12**

a) Explain the program development steps in assembly language programming.

b) Explain 8086 μp architecture in detail.

c) Explain the following instructions with example also write its syntax.

i)RCR ii) SHL iii)ADC iv) SBB v) MOV vi) SCANS.

Q.6. Attempt any **TWO.** **12**

a) Explain the following

i) Simple keyboard ii) Stepper motor.

b) Explain the addressing modes of 8086 microprocessor with an example.

c) Draw & explain 8086 minimum mode system design.

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PROGRAMME:DIPLOMA IN COMPUTER ENGINEERING.

COURSE CODE & ITS TITLE: CM3909 COMPUTER SECURITY

Time Allowed : 03 Hrs **Marks: 80**

Instructions:

1. Write your Identity Code Number on question paper.
2. All questions are compulsory.
3. Illustrate your answers with neat sketches wherever necessary.
4. Use of non-programmable calculator is permissible.
5. Figures to the right indicate full marks.
6. Assume suitable additional data, - if necessary – and state the assumptions made.
7. Each sub-question in a question carries equal marks unless otherwise specified.

Marks

Q.1. Attempt any **TEN** **20**

a) Define the term Vulnerability.

b) What is Threat?

c) Define the term virus.

d) Give the Guidelines for password selection.

e) Define term Dumpster diving.

f) What is plain text and cipher text?

g) List different types of IDS's.

h) What is Firewall?

i) List the threats in Network security.

j) What is Encryption?

k) List different categories of attack.

l) What is security plan? Enlist the contents of security plan.

m) What are the factors for physical security?

n) List different Human vandals.

Q.2. Attempt any **THREE.** **12**

a) Explain types of Hackers.

b) Explain the transformation of plain text into cipher text with example.

c) Explain the Kerberos authentication system with neat diagram.

d) Explain the following

i) OTP ii) Challenge Response System.

e) Explain different types of Natural Disasters.

Q.3. Attempt any **THREE.** **12**

a) Explain different types of access controls.

b) Explain DES algorithm with diagram.

c) How Digital signature can be formed?

d) Explain the functions of IDS's.

e) Explain the architecture of IP security.

Q.4. Attempt any **THREE.** **12**

a) Explain the Piggybacking and shoulder surfing.

b) With neat diagram explain peer to peer trust model.

c) Explain the steps in the various round of AES.

d) Compare the different types of firwalls.

e) Describe IDs strengths and Limitations.

Q.5. Attempt any **TWO.** **12**

a) Explain IPSec Configuration.

b) Describe the concept of Honey Pots with examples.

c) Explain how encryption is use for E-mail security.

Q.6. Attempt any **TWO.** **12**

a) Explain security Goals in detail.

b) Explain Biometric system for signature and writing patterns.

c) Write short note on 'Power Loss, Surge Suppressor.

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PROGRAMME: DIPLOMA IN COMPUTER ENGINEERING
COURSE CODE & ITS TITLE : CM3910 NUMERICAL METHOD
Time Allowed : 03 Hrs **Marks: 80**

Instructions:

1. Write your Identity Code Number on question paper.
2. All questions are compulsory.
3. Illustrate your answers with neat sketches wherever necessary.
4. Use of non-programmable calculator is permissible.
5. Figures to the right indicate full marks.
6. Assume suitable additional data, - if necessary and state the assumptions made.
7. Each sub-question in a question carries equal marks unless otherwise specified.

Marks

Q.1. Attempt any **TEN.** **20**

a) Define data error and round off error.

b) What is blunder error? List any four errors caused by human imperfection.

c) Round off the following numbers using symmetric round off correct upto 4 singnificant digits after decimal places.

d) Write floating point representation of following numbers –

(i) 0.2×10^{-3} (ii) 2.359 .

e) Write the formula used in Bisection method and Rugula falsi method.

f) Write formula used in Newton Rapson Method.

g) Enlist numerical methods used to solve algebric and transcedential equations.

h) List numerical methods used to solve simultaneous equation.

i) Write working rule of Gauss-elimination method.

j) Write steps to be followed in Gauss-Jordan method.

k) Define the term interpolation and write formula for Newton's forward difference interpolation equal interval.

l) Form the forward difference table for given data points.

x	0	1	2	3
F(x)	1	2	1	10

m) List formulae used for numerical integration.

n) Write formula for Simpson's 1/3 rule.

Q.2. Attempt any **THREE.** **12**

a) How will you round off a number by using chopping rounding off rule.

b) Explain in brief concept of significant digit in computer arithmetic.

c) (i) Round 10.482 to 2 digit after decimal places

(ii) Truncate 10.482 to 2 digit after decimal places.

d) Write working rule of Newton's Rapson method.

e) Write steps to be followed in Gauss-seidel method.

Q.3. Attempt any **THREE.** **12**

a) Write working rule of Gauss Elimination with partial pivoting.

b) Write steps to be followed in Gauss Jordan method.

c) Write working rule of Bisection method.

d) Write working rule of Newton Rapson method.

e) Find root of equation $2x = \text{Cos } x + 3$ using iteration method.

Q.4. Attempt any **THREE.** **12**

a) Form Newton's Backword difference table for following values.

x	x_0	x_1	x_2	x_3	x_4
y	y_0	y_1	y_2	y_3	y_4

b) Write the formula used in Langrage's interpolation for any x.

c) Solve $\int_0^6 \frac{dy}{1+x^2}$ by using Trapezoidal rule.

d) Solve $\int_0^6 \frac{dy}{1+x^2}$ by using Simponson's 1/3 rule.

e) Form Newton's divided difference table for following data.

x	x_0	x_1	x_2	x_3	x_4	x_5
y	y_0	y_1	y_2	y_3	y_4	y_5

Q.5. Attempt any **TWO.** **12**

a) If $x = 0.005998$ is rounded off to three decimal digits, find -

(i) absolute error (ii) relative error (iii) percentage error.

b) Solve equation $xe^2 = \text{Cos } x$ by Regular false method correct upto 4 decimal places.

c) From the following table estimate the No. of students who obtained marks between 40 to 45.

Marks	30-40	40-50	50-60	60-70	70-80
No. of Students	31	42	51	35	31

Q.6. Attempt any **TWO.** **12**

a) Solve by Gauss-Jordan method –

$$6x - y + z = 13$$
$$x + y + z = 9$$
$$10x + y - z = 19.$$

b) Using Newton's Backward interpolation formula, find f (42) for following data.

x	20	25	30	35	40	45
f (x)	354	332	291	260	231	204

c) A river is 80 m wide. The depth 'd' in meter at a distance 'x' meter from one bank is given by following table.

x(m)	0	10	20	30	40	50	60	70	80
d(m)	0	4	7	9	12	15	14	08	03

Find approximately the area of the cross section.

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PROGRAMME: DIPLOMA IN COMPUTER ENGINEERING

COURSE CODE & ITS TITLE: CM5965 – ADVANCED JAVA PROGRAMMING.

Time Allowed : 03 Hrs **Marks: 80**

Instructions:

1. Write your Identity Code Number on question paper.
2. All questions are compulsory.
3. Illustrate your answers with neat sketches wherever necessary.
4. Use of non-programmable calculator is permissible.
5. Figures to the right indicate full marks.
6. Assume suitable additional data, - if necessary – and state the assumptions made.
7. Each sub-question in a question carries equal marks unless otherwise specified.

Marks

Q.1. Attempt any **TEN.** **20**

a) List types of AWT events in java.

b) Give default layout manger of following AWT components.

i) Frame ii) Window iii) Panel iv)Dialog

c) What is the use of InetAddress class? Give Syntax.

d) Define proxy server. Give its advantages.

e) List any two reserved sockets with their protocol.

f) List two ways for loading and registering JDBC driver and give their syntax.

g) List the advantages of using three tier database design.

h) What is CORBA?

i) What is stub?.

j) What is RMI? List goal of RMI.

k) What is the use of ServletConfig class?

l) What is cookie? Give syntax to create cookie.

m) What is session? Why it is important?

n) List the service methods available in HTTP.

Q.2. Attempt any **THREE.** **12**

a) Compare AWT with swing.

b) Write a java program for creating menubar and adding menu items to it.

c) Explain JDBC type-I and type-II drivers with neat diagram and list their disadvantages.

d) Explain the concept of i) Distributed Garbage collection ii) Serializing Remote objects.

e) Write a servlet to accept data from user as ID, NAME and AGE and print the user information after submission of form.

Q.3. Attempt any **THREE.** **12**

a) Write a program in java for TCP server that responds to the client with welcome message and server IP address.

b) Explain with diagram socket programming using TCP.

c) Write a code snippet in java to fetch all the rows from student table and display the data.
Table: student (rob-no, first-name, last-name, contact-no).

d) Explain the concept of CORBA in detail.

e) Explain with diagram standard call and Return in CORBA.

Q.4. Attempt any **THREE.** **12**

a) Write a code snippet in java to increase salary of all employees in employee table by 10% table: Employee (emp-id, emp-name, salary).

b) What is the use of ResultSet? List its Methods and explain by giving example.

c) Compare statefull session bean with stateless session bean.

d) What is IDL? Explain the features of IDL.

e) Write a servlet to accept a session value of HttpSession and retrieve the value on next page.

Q.5. Attempt any **TWO.** **12**

a) Write a java program to design simple calculator in java using AWT component.

b) Write a program in java that will delete record of student with specified roll-no, accept the roll-no as a command line argument. Table : student (roll no, first – name, Last –name contact - no).

c) Explain session Bean and Message Driven Bean.

Q.6. Attempt any **TWO.** **12**

a) Explain EJB architecture with neat diagram.

b) Explain Java RMI architecture.

c) Write a servlet to create Registration form with field name, ph-no, address, age, Gender, and save these information to database for future reference.

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PROGRAMME: DIPLOMA IN COMPUTER ENGINEERING

COURSE CODE & ITS TITLE: CM5966 COMPUTER GRAPHICS

Time Allowed : 03 Hrs **Marks: 80**

Instructions:

1. Write your Identity Code Number on question paper.
2. All questions are compulsory.
3. Illustrate your answers with neat sketches wherever necessary.
4. Use of non-programmable calculator is permissible.
5. Figures to the right indicate full marks.
6. Assume suitable additional data, - if necessary – and state the assumptions made.
7. Each sub-question in a question carries equal marks unless otherwise specified.

Marks

Q.1. Attempt any **TEN** 20

a) State any four advantages of computer Graphics.

b) Write advantages and disadvantages of BMP (02 each)

c) Write advantages and disadvantages of LCD (02 each)

d) State the basic characteristics of line.(any four)

e) Define Polygan and give its types.

f) Define fractals. Enlist any two examples of fractals.

g) What do you mean by rotation about an arbitrary point.

h) Give the 2-D transformation matrix for

i) Reflection ii) Shearing.

i) Define i) Window ii) Viewport.

j) Write any two properties of koch curve.

k) Enlist any four graphics standard available.

l) Write any two functions of GUI.

m) Differentiate between Raster scan display and Random scan display. (Any two points)

n) State use of Bresenham's algorithm.

Q.2. Attempt any **THREE** 12

a) With neat diagram, explain liquid crystal display.

b) Differentiate between raster and random scan display.

c) Write the steps of DDA line drawing algorithm.

d) Write steps of scan line algorithm for polygon filling method.

e) Translate a polygon with coordinates A (2,5), B(7,10) and C(9,1) by 2 units in x - direction and 4 units y – direction.

Q.3. Attempt any **THREE.** **12**

a) Explain Cartesian coordinate system.

b) Write a 'C' program for Bresenham's line drawing algorithm.

c) Explain inside outside test for polygon with example.

d) Explain viewing transformation.

e) Magnify the triangle with vertices A(0,0), B(2,2) and C(5,0) to twice of its size while keeping C(5,0) fixed.

Q.4. Attempt any **THREE.** **12**

a) Explain Cohen-sutherland subdivision line clipping algorithm.

b) Explain Hillbert's curve and give its fractal dimension.

c) Write any four properties of Bezier curve.

d) Write any four advantages of graphics standards.

e) Explain hazards in graphics standards.

Q.5. Attempt any **TWO.** **12**

a) Explain any six graphic functions with syntax and example.

b) Write 'C' code for polygon filling using flood fill algorithm.

c) Explain and give 3D transformation matrix for

i) Translation ii)Rotation iii) Scaling.

Q.6. Attempt any **TWO.** **12**

a) Describe processing of polygon vertices in sutherland-Hodgeman polygon clipping.

b) Write steps for DDA algorithm for arc generation.

c) With neat diagram, explain how Open GL works.

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WINTER - 2018

PROGRAMME: DIPLOMA IN COMPUTER ENGINEERING

COURSE CODE & ITS TITLE : CM5971 ADVANCE WEB TECHNOLOGY USING PHP

Time Allowed : 03 Hrs **Marks: 80**

Instructions:

1. Write your Identity Code Number on question paper.
2. All questions are compulsory.
3. Illustrate your answers with neat sketches wherever necessary.
4. Use of non-programmable calculator is permissible.
5. Figures to the right indicate full marks.
6. Assume suitable additional data, - if necessary and state the assumptions made.
7. Each sub-question in a question carries equal marks unless otherwise specified.

Marks

Q.1. Attempt any **TEN.** **20**

a) Write the outputs of following.
   i) $var = "100" + 15 ($var is set to integer)
   ii) $var = 40 + "2 computer" ; ($var is set to string)
b) List the different functions that checks the variable type.
c) Give syntax of for each with example.
d) Write a PHP script to check the entered number is Armstrong or not.
e) Write a PHP script to sort using function.
f) How to declared session and assign a session variable?
g) Define join query with example.
h) What is MySQL Command Interpreter.
   Write steps in MySQL to execute "select" command.
i) Define destroying of objects & also write function for destroying of objects.
j) Define the term inheritance with example.
k) How information is passed to HTML form.
l) Write a PHP script to write text content to a file.
m) Write use of document object model, with example.
n) Write the meaning of the following file permission function.
   i) filegroup () ii) chown ().

Q.2. Attempt any **THREE.** **12**

a) Describe the different features of PHP.
b) Write a PHP script for menu driven program for the following options.
   i) To display the Reverse of five digit number.
   ii) To display the entered number is palindrome or not.
c) Write a PHP script to update the record into MySQL database.
d) Explain session management in PHP.
e) Describe different file opening mode and illustrate the fwrite() function with the help of example.

Q.3. Attempt any **THREE.** **12**

a) Illustrate the function print_r( ) and var_dump( ), with help of example also write difference between print_r( ) and var_dump( ).

b) Describe the following functions.

i) in_array( ) ii) array_search ( )

c) Write a PHP script to setting a cookie using PHP.

d) Explain throwing and catching exception in PHP.

e) Describe navigation of web sites with multiple pages with the help of example.

Q.4. Attempt any **THREE.** **12**

a) Describe the middle tier architecture model of a web database application.

b) Explain associative array with example.

c) Describe how the session is managed without the use of cookies with help of example.

d) Differentiate between GET and POST method and also illustrate how GET and POST method implemented.

e) Write PHP script to design a login form having fields username & password. Use MySQL database to store username and password is correct or not. If it is correct, then navigate to another form and logout from the current page (use session)

Q.5. Attempt any **TWO.** **12**

a) Explain how variables are passed to function and write a PHP script to generate random number.

b) Write a PHP Script to define class student having attributes ID, name, sem and branch. Inherit class Result. Take five subject marks as input and calculate total marks and percentage of student also display the division of the student.

c) Explain session management over web with the help of example.

Q.6. Attempt any **TWO.** **12**

a) Write a PHP script that illustrate the generation of dynamic form.

b) Demonstrate the use of $this variable with the help of example also explain it.

c) Write a PHP script to insert record of employees. Display the ID of those employees who are having maximum salary (Display top 5 employees having maximum salary).

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