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TERM END EXAMINATION
SUMMER - 2018

PROGRAMME: DIPLOMA IN COMPUTRE ENGINEERING.

COURSE CODE & ITS TITLE: CM370 DATABASE MANAGEMENT SYSTEMS

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 SIX

12



- a) Enlist any four advantages of DBMS.
- b) Define i) candidate key ii) primary key.
- c) What is view? Give syntax for creating view.
- d) Explain second normal form.
- e) What is i) Hashing ii) indexing.
- f) Enlist different transaction state & draw transaction state diagram.
- g) What are declarative constructs in SQL?
- h) Explain projection & join?

Q.2. Attempt any TWO.

12

- a) What is data abstraction? Explain different level of data abstraction with neat diagram.
- b) Explain the following term
 - i) Data base management system.
 - ii) Data Redundancy
 - iii) Data integrity and security.
- c) List different types of constraints and explain then in details by giving example.

Q.3. Attempt any TWO.

12

- a) With neat diagram explain different types of data models.
- b) What is relation calculus explain in details.
- c) Explain different aggregate function in SQL by giving example.

Q.4. Attempt any TWO.

12

- a) Construct SQL queries for given data requirement use table employee & Incentives.

Table: Employee

employee_id	first_name	last_name	salary	department
1	John	paul	40000	Banking
2	Vaideni	raut	50000	Insurance
3	Shriram	Deshmukh	35000	Banking
4	Omprakash	Thool	32000	Banking

Table: Incentives

employee_id	incentive_amount
1	7000
2	3000
3	9000
4	5000

- i) Get details of employees whose last name contains alphabet 't'
ii) Get employee_id, first_name, salary, incentive of employee having incentive_amount greater than or equal to 5000.
iii) Get details of employees whose salary is greater than 25000 and department is banking.
- b) Explain with example creation, updation deleting tables?
c) What is normalization? Explain first normal form and BCNF in details.



Q.5. Attempt any TWO.

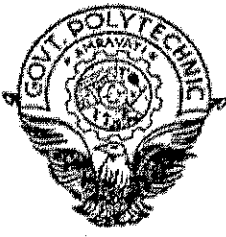
12

- a) Explain Entity Relationship model and Translations of ER schemes to relational schemes.
b) Explain different organization methods
c) Explain details general for query processing.

Q.6. Attempt any FIVE.

20

- a) Explain the following term.
i) Multi valued dependencies ii) Composite attribute iii) Simple attribute iv) Derived attribute
b) Explain i) Sequential Access ii) Direct Access
c) Explain equivalence expression.
d) Explain 2 phase lock protocol.
e) Describe time stamp based concurrency control.
f) What is transaction? Explain the concept of serializability.
g) Explain integrity constraints in SQL.
h) What is Authorization? Describe use by of grant and revoke commands. By giving example.



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**TERM END EXAMINATION
SUMMER- 2018**

PROGRAMME: DIPLOMA IN COMPUTER ENGINEERING

COURSE CODE & ITS TITLE: CM 661 SYSTEM 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 SIX

12

- a) Enlist any four sorting techniques.
- b) List out the databases used for direct linking loader.
- c) Define "Compile and go" loader.
- d) Give advantage of compile and go loader.
- e) List out any two advantages of subroutine linkages.
- f) List out the phases of compiler.
- g) Define token.
- h) Define lexical analysis.

Q.2. Attempt any TWO.

12

- a) State use of i) Loader ii) Linker iii) Assembler.
- b) Explain system programming and its components.
- c) Write how system software is evolved.

Q.3. Attempt any TWO.

12

- a) Explain Bucket sort with suitable example.
- b) Explain Binary search technique with suitable example.
- c) Give detailed PASS-1 flowchart for assembler.

Q.4. Attempt any TWO.

12

- a) For the following program.

Loop 1	A	1, DATA 1
	A	2, DATA 2
	A	3, DATA 3
Loop 2	A	1, DATA 3
	A	2, DATA 2



	A	3, DATA 1
DATA 1	DC	F'5'
DATA 2	DC	F'10'
DATA 3	DC	F'15'

- i) show MDT after macro processing
 - ii) show MNT after macro processing
- b) List and explain features of macro facility.
- c) Explain following.
- i) Macro definition table
 - ii) Macro name table

Q.5. Attempt any TWO.

12

- a) Explain absolute loader scheme with its advantages and disadvantages.
- b) Explain working of relocating loader.
- c) What are address constants? Give and explain example of following address constants.
 - i) simple relocatable
 - ii) absolute
 - iii) complex relocatable

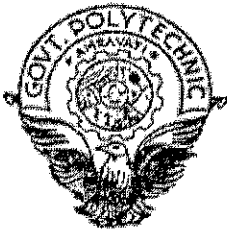
Q.6. Attempt any FIVE.

20

- a) Compare lexical phase and syntax phase (any four points)
- b) Draw the parse tree for the following expression.
 $Cost = Rate * (start - Finish) + 2 * Rate * (start - Finish - 100);$
- c) Describe assembly phase of compiler.
- d) What is intermediate term? Explain .
- e) Explain various databases used in the interpretation phase of compiler.
- f) Give and explain the format of pseudo-operation table (POT) of assembler.
- g) Explain the format of global external symbol table and local external symbol table.
- h) Explain passes of compiler.

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TERM END EXAMINATION
SUMMER- 2018

PROGRAMME: DIPLOMA IN COMPUTER ENGINEERING

COURSE CODE & ITS TITLE: CM664 WEB DESIGNING AND DEVELOPMENT

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 SIX

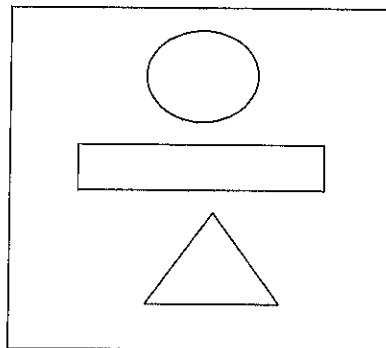
12

- a) What is Meta tag?
- b) List types of image map.
- c) What is HSPACE and VSPACE attribute of tag.
- d) State the use of a link attribute of <BODY> tag.
- e) Define the term image map.
- f) Enlist the attributes of <FORM> tag.
- g) Write any four style sheet properties.
- h) Enlist data types of JavaScript.

Q.2. Attempt any TWO.

12

- a) Design a web page that includes block level tags and some text level tags.
- b) What is URL? Explain different type of URL in brief.
- c) Write HTML code for creating following client side image map.



Q.3. Attempt any TWO. **12**

- a) Write an HTML code to use different attributes of table.
- b) Write use of src, frame border, margin width and scrolling attribute of FRAME tag.
- c) What is frame? Write any four advantages and disadvantages of using frames.

Q.4. Attempt any TWO. **12**

- a) Explain any two types of adding a style to a document with example.
- b) Design a student registration form using FORM fields in HTML.
- c) Explain JavaScript operators and control statements.

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

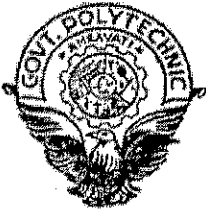
- a) Write a JavaScript code to create Fibonacci series of 'n' numbers using function.
- b) Explain use and manipulation of Date object.
- c) Explain the use of validating numeric and string data with example.

Q.6. Attempt any FIVE. **20**

- a) Explain following terms in brief i) Webpage ii) Web server iii) Web browser iv) Search Engine
- b) What is frame targeting? Explain with example.
- c) Explain the Anchor Tag with example.
- d) Explain <SELECT> tag and its attributes.
- e) Explain with example the switch statement in JavaScript.
- f) Write a JavaScript code to read an age of a user and identify if he is minor (less than 18 yrs) or not using on click event.
- g) Explain style sheet with example.
- h) Explain scripting of frames in brief using HTML.

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TERM END EXAMINATION
SUMMER - 2018

PROGRAMME: DIPLOMA IN COMPUTER ENGINEERING

COURSE CODE & ITS TITLE : CM3908 MICROPROCESSOR AND APPLICATIONS

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

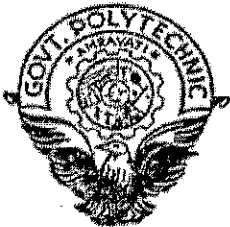
- a) Write down the functions of SID and SOD pin of 8085 microprocessor.
- b) What is the function of program counter and stack pointer of 8085 microprocessor.
- c) Explain the functions of READY and TEST pin of 8086 microprocessor.
- d) Define - (i) Firmware (ii) Time sharing system.
- e) Enlist assembly language program development tools.
- f) Define - (i) Linker (ii) Debugger.
- g) Give syntax for multiplication and division instructions in ALP.
- h) Compare direct addressing mode with register addressing mode.
- i) What is the use of JMP instruction of 8086 microprocessor?
- j) State two instructions each for addition and subtraction operation.
- k) Explain following instructions - (i) IN (ii) OUT.
- l) Calculate the physical memory address for CS : 0123 , IP : 2532.
- m) What is interrupt?
- n) Compare maskable and non-maskable interrupt.

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

12

- a) Describe the function of -
(i) Timing & Control Unit (ii) Instruction Decoder & Machine Cycle encoding of 8085 microprocessor.
- b) Write short note on - (i) Multitasking (ii) Distributed Processing.
- c) Explain the flag control instructions.
- d) Explain the troubleshooting of 8086 microprocessor based microcomputer.
- e) Explain stepper motor with diagram.





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TERM END EXAMINATION

SUMMER - 2018

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) List different hardware control devices.
- b) What is malicious code? State its disadvantages.
- c) State principle of Effectiveness.
- d) What are security awareness?
- e) List any six environmental damage.
- f) Differentiate between monoalphabetic and polyalphabet cipher. (Any two points)
- g) List different types of intrusion detection system.
- h) Define the following
 - i) Transport mode
 - ii) Tunnel mode.
- i) State use of honeypot.
- j) Give the threats in Network security.
- k) What is OTP?
- l) List out the requirements for secure email.
- m) What is human vandals?
- n) State the different natural disasters.

Q.2. Attempt any THREE.

12

- a) What are the six Requirements of the TC SEC.
- b) Describe Link Encryption with help of diagram.
- c) Draw and explain segmented architecture of Network security.
- d) Convert the following plain text into cipher text using Rail Fence Technique.
"ENEMY ATTACKS TONIGHT"
- e) Compare worms & viruses (Any Eight points)



Q.3. Attempt any THREE.

12

- a) Describe the piggybacking and shoulder surfing.
- b) Distinguish between symmetric and Asymmetric key Cryptography.
- c) Explain the transformation of plain text into cipher text using ceasar cipher with the help of example.
- d) Describe the strengths and limitations of intrusion detection system.
- e) Describe the following layers of ISO-OSI Reference model.
 - i) Application layer
 - ii) Network layer.

Q.4. Attempt any THREE.

12

- a) Describe any four advantages of IPSec.
- b) What is fire wall? Describe different types of fire wall.
- c) With neat diagram explain peer to peer trust model.
- d) Explain the steps in the various round of AES.
- e) Describe how access control can be used for physical security.

Q.5. Attempt any TWO.

12

- a) Describe IPSec architecture.
- b) Explain strong authentication kerberos protocol & its working.
- c) Describe any six issue of security plan.

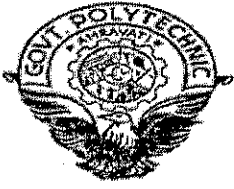
Q.6. Attempt any TWO.

12

- a) Write short note on
 - i) Power Loss
 - ii) Natural disasters
 - iii) Surge suppressor
- b) Describe the model of physical security Biometric system.
- c) Explain Vulnerabilities, Threats, attacks and controls with exmples.

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TERM END EXAMINATION
SUMMER - 2018

PROGRAMME : DIPLOMA IN COMPUTER ENGINEERING
COURSE CODE & ITS TITLE: CM 3910 – NUMERICAL METHODS

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) What is accuracy of the following numbers?
(i) 0.007523 (ii) 0.0548000 (iii) 5200 (iv) 4500.00
- b) Write precision of the following numbers
(i) 8.760867 (ii) 4.0786 (iii) 0.00485 (iv) 56428.48
- c) Find roundoff error in storing number 352.4262 correct up to 4 digit mantissa.
- d) What is modeling error?
- e) Write formula used in regula falsi method and Bisection method.
- f) Write stepwise procedure of Newton Rapson method.
- g) Enlist numerical methods used to solve algebraic and transcendental equation.
- h) Write working rule Gauss elimination method.
- i) Write steps to be followed in Gauss Seidal method.
- j) Write working rule of Gauss Jacobi method.
- k) Write Newton's backward interpolation formula for four given data points.
- l) What is interpolation? List methods to find interpolation.
- m) What is integration? List formula to be used for integration.
- n) Write Trapezoidal rule to find integration.

Q.2. Attempt any THREE.

12

- a) (i) Add the numbers $0.735816E4$ and $0.635742E4$
(ii) Subtract 0.994576^{E-3} from 0.999658^{E-3}
- b) Write rule for significant digits.
- c) What is truncation error? Give example.
- d) Find roots of equation $x^3 - x - 4 = 0$ using Bisection method, correct upto 3 decimal places.
- e) Write stepwise procedure of Gauss Jordan method.





x	1.5	2.0	2.5	3.0	3.5	4.0
y	3.375	7.0	13.625	24	35.875	39

e) Find $\frac{dy}{dx}$ at $x = 1.5$ from the table

find approximately the area of the cross section

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

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

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

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

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

Also find f'(4) and f''(4)

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

a) Find the cubic polynomial which takes the following values.

Q.4. Attempt any THREE.

$$\begin{aligned} x_1 - 2x_2 - 5x_3 &= 10 \\ 3x_1 + x_2 - 3x_3 &= 5 \\ x_1 + x_2 + x_3 &= 1 \end{aligned}$$

e) Solve the equation by Gauss elimination method

d) Find cuberoot of 48 by Newton Rapson method correct up to 4 decimal places.

$$\begin{aligned} 3x + y - 3z &= 5 \\ x + y + z &= 1 \\ x + 2y + z &= 1 \end{aligned}$$

c) Evaluate x, y, z by using Jacobi method

$$\begin{aligned} x + 4y + 9z &= 16 \\ 3x + 2y + 3z &= 18 \\ 2x + y + z &= 10 \end{aligned}$$

b) Solve following system by gauss elimination with pivoting

a) Find squareroot of 5 by using regula falsi method correct up to three decimal places.

Q.3. Attempt any THREE.

Q.5. Attempt any TWO.

12

- a) Explain in brief blunder error.
- b) Find solution of equation by bisection method
 $f(x) = xe^x - \cos x = 0$
- c) Apply Inverse Lagrange's method to find value of x when $f(x) = 15$ from given data points.
x 5 6 9 11
f(x) 12 13 14 16

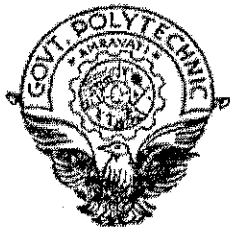
Q.6. Attempt any TWO.

12

- a) Solve by Gauss seidel method.
 $83x + 11y - 4z = 95$
 $7x + 52y + 13z = 104$
 $3x + 8y + 29z = 71$
- b) Use Newton's divided difference formula to find
 $f(x)$, $f(4)$ and $f'(4)$
x 0 2 3 6
(x) 648 704 729 792
- c) Solve $\int_0^6 \frac{dy}{1+x^3}$ by using simpson's 1/3 rule.

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TERM END EXAMINATION

SUMMER - 2018

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) Give syntax to create List in AWT and adding items to it.
- b) List components and containers available in swing.
- c) What is the use of Inet Address class? Giver syntax.
- d) List any four socket functional calls and give their purpose.
- e) Why should server continuously listen for request from client? How to achieve it?
- f) What is Three tier architecture? Draw the diagram for three-tier architecture.
- g) List the advantages of using prepared statement.
- h) What is RMI? List the goals of RMI.
- i) What is RMI-IIOP? Who develop RMI-IIOP?
- j) What Is IDL? List the features of IDL.
- k) What is the use of HttpServlet Request object and HttpServletResponse object?
- l) What is cookie? Give syntax to create cookie.
- m) When the servlet is loaded and unloaded?
- n) What is deployment descriptor?

Q.2. Attempt any THREE.

12

- a) What is Swing? Explain features of Swing.
- b) Write a program in AWT to design form using components lable, textfield, scrollbar and radio buttons.
- c) Explain IDBC Type I & Type II drivers with neat diagram and list their disadvantages.
- d) List the components of working RMI system and explain them in brief.
- e) How doGet method is different from doPost method?



Q.3. Attempt any THREE.

12

- a) Write a java program for UDP server.
- b) Write a program in java to retrieve hostname using method in InetAddress class.
- c) What is the use of ResultSet? List its methods and explain by giving example.
- d) Explain the concept of CORBA in detail ? List the specification and implementation of CORBA
- e) Explain with diagram standard call and return in CORBA

Q.4. Attempt any THREE.

12

- a) What is JDBC API ? List the classes available in JDBC and give their uses.
- b) Write a JDBC program to establish connection with database.
- c) What is EJB container? List and explain the services provided by EJB container.
- d) Give comparison between distributed and non distributed java programming.
- e) Explain servlets life cycle methods by giving proper syntax.

Q.5. Attempt any TWO.

12

- a) Write a java program for creating Menubar and adding menu items to it.
- b) Write a java program to delete top five rows from Employee table.
- 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 Httpservlet that uses cookie.

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TERM END EXAMINATION
SUMMER - 2018

PROGRAMME: DIPLOMA IN COMPUTER ENGINEERING

COURSE CODE & ITS TITLE : CM5971 – ADVANCED 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) State the use of “ echo” statement.
- b) Write the output of the following
 - i) \$var = “100” + 15 ; (\$var is set to integer)
 - ii) \$var = 39. “ Steps” ; (\$var is set as a string)
- c) Give a Syntax of for each with example.
- d) Write a PHP script to check the entered number is even or odd.
- e) Write a PHP script to sort the numbers in a array.
- f) List the functions for accessing the sessions in PHP.
- g) Define MYSQL command Interpreter.
- h) What is destroying of objects ?
- i) Write use of \$ this variable.
- j) Give difference between GET and POST method. (any two)
- k) Write a PHP script to read a file.
- l) Define Document object model.
- m) Define constructor and its syntax.
- n) Write the meaning of the following file permission function:
 - i) chgrp() ii) fileowner()

Q.2. Attempt any THREE.

12

- a) Explain the features of PHP.
- b) Explain print r () and var_dump () function with the help of example.
- c) Write a PHP script to display all records present into database.
- d) Describe cookies and write a PHP script setting cookies.
- e) Describe the steps for creation of Login form in PHP.

Q.3. Attempt any THREE.

12

- a) Write a PHP script to print Armstrong numbers between 1 to 1000.
- b) Write a PHP script to insert the record into MYSQL database.
- c) Explain exception handling in PHP with the help of example.
- d) Explain the navigation of websites with the help of example.
- e) Explain working of AJAX and role AJAX in PHP.

Q.4. Attempt any THREE.

12

- a) Write a PHP script to find the greater between three numbers.
- b) Explain the following array function : i) asort () ii) usort ()
- c) Explain session management in PHP.
- d) Describe the terms destructor and demonstrate it with help of example.
- e) Describe Managing user with session.

Q.5. Attempt any TWO.

12

- a) Write a PHP script for menu driven program for following options.
 - i) To display the Reverse of five digit numbers.
 - ii) To display the entered numbers is Armstrong or not.
- b) Explain session managing without cookies in PHP.
- c) Write a PHP script to define class student having attributes student ID, Name, Sem, Branch. Take five subjects marks as input and calculate the total marks and percentage of student and finally display the division of the student.

Q.6. Attempt any TWO.

12

- a) Describe the functions for accessing sessions in PHP:
 - i) Session_start ()
 - ii) Session_register ()
 - iii) Session_unregister
 - iv) Session_id ()
- b) Write a PHP script to write text content to a file.
- c) Demonstrate the use of this variable using the following PHP script. Define class rectangle with constructor height and breadth. Calculate the area of rectangle and perimeter of rectangle also check whether rectangle is square or not.

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