KUMARAGURU
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B.E DEGREE EXAMINATIONS: MAY 2017
(Regulation 2014)
Sixth Semester
COMPUTER SCIENCE AND ENGINEERING
U14CSTE31: Open Source Technologies

COURSE OUTCOMES

CO1: Explain the use of various open source software available in the industry.
CO2: Summarize the differences between open source and proprietary software.
CO3: Compare the technical differences between PHP, Python and Perl.
CO4: Build an open source platform to develop a project/application for solving real world problem.
CO5: Demonstrate the interoperability among various open source tools and its applications.

Time: Three Hours　　　　　　　　　　　　　　　　　　　　　　　**Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Match:　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　CO2 [K_1]

List I	List II
A. Natural Join	i). Self Join
B. Joining a table to itself	ii). Type of Inner Join
C. /^[0-9]{5}(\-[0-9]{4})?$ /	iii). play it again
D. /ab{2,4}/ ?	iv). a2b

	A	B	C	D
a)	ii	i	iii	iv
b)	iii	iv	ii	i
c)	ii	iv	iii	i
d)	iii	i	ii	iv

2. Shell is a Bridge between-------------　　　　　　　　　　　　　　　　　　　　　CO1　[K1]

　　a) Application and Hardware　　　　　　b) User and Hardware

　　c) All of these　　　　　　　　　　　　d) Kernel and the user

3. To add a new element to a list which commands do we use?　　　　　　　　　　CO2 [K1]
　　1. list1.add(5)
　　2. list1.addLast(5)
　　3. list1.append(5)
　　4. list1.addEnd(5)
　　a) 1　　　　　　　　　　　　　　　　　b) 1,2,3

　　c) 3　　　　　　　　　　　　　　　　　d) 2,3,4

4. Which one of the following processes has the first process id in Linux? CO1 [K₂]

   a) login   b) inetd

   c) update   d) init

5. Assertion (A): Including a file produces the same result as copying the data from the file   CO1 [K1]
   specified into the location in which the statement appears.

   Reason:. Any code found within an included file will inherit the variable scope of the
   location of its caller.

   a) Both A and R are Individually true and   b) Both A and R are Individually true but
      R is the correct explanation of A   R is not the correct explanation of A

   c) A is true but R is false   d) A is false but R is true

6. MySQL Access security is controlled through------------------   CO3 [K1]

   a) The ID that the user logged into the   b) MySQL login accounts, and privileges
      server through, and privileges set up   set for each account
      for that account.

   c) The normal login security is sufficient   d) A table of valid IP addresses, and
      for MySQL, and it does not have any   privileges set up for each IP address
      extra controls of its own.

7. Study the following steps and determine the correct sequence during database connectivity   CO4 [K₂]

   (1) Open a connection to MySql server
   (2) Fetch the data from query
   (3) Execute the SQL query
   (4) Select database
   (5) Close Connection

   a) 1- 4- 2- 3- 5   b) 4- 1- 2- 3- 5

   c) 1- 5- 4- 2- 3   d) 3- 1- 4- 2- 5

8. The constructor for the parent class in PHP is called by ------------------   CO4   [K₁]

   a) Super()::Child class name   b) Parent class name::constructor name

   c) Parent:: constructor name   d) Super()::Constructor name

9. Assertion (A): All the attributes of a super key are not required to identify each uniquely in   CO2 [K₁]
   relation

   Reason: Super key contains extraneous attributes

   a) Both A and R are Individually true and   b) Both A and R are Individually true but
      R is the correct explanation of A   R is not the correct explanation of A

   c) A is true but R is false   d) A is false but R is true

10. In PERL, which conditional statement is equivalent to "if (!<condition>)"?   CO5 [K₁]

    a)   unless (<condition>)   b)   failure (<condition>)

    c)   ifn (<condition>)   d)   fails (<condition>)

PART B (10 x 2 = 20 Marks)

(Answer not more than 40 words)

11.	Illustrate the Linux OS architecture.	CO1	[K₂]
12.	Utilize the process command in Linux to list out all the currently running process in a system.	CO1	[K₂]
13.	Outline the various advantages and disadvantages of Open Source Software.	CO2	[K₂]
14.	Make use of MySQL query to create a new user and grant access.	CO2	[K₂]
15.	Write a function in PHP program to count Words ($str) that take any string of characters and finds the number of times each word occurs. You should ignore the distinction between capital and lower case letters, and do not have to worry about dealing with characters that are not letters.	CO3	[K₂]
16.	Write a PHP script to generate a Fibonacci series with each number to be generated in a separate row of a HTML table	CO3	[K₂]
17.	Write a program to find all numbers between 2000 and 3000 (both inclusive) which are divisible by 7 but not a multiple of 5. All such numbers are to be printed in a comma separated sequence on a single line.	CO4	[K₂]
18.	Write a Python function to check whether a number is in a given range.	CO4	[K₂]
19.	Write a PERL code to convert from scalar to array and vice versa	CO5	[K₂]
20.	Write a shell script program to develop a scientific calculator.	CO5	[K₂]

Answer any FIVE Questions:-
PART C (5 x 14 = 70 Marks)
(Answer not more than 300 words)

Q.No. 21 is Compulsory

21. a) Apply the knowledge of PHP to design and write a program to do the following   (10)   CO3 [K₂]

     operations for an Online Result management system

       1. Inserting the student details,(ID must be auto generated)

       2. Finding a student result using ID

       3. Displaying all the student information belonging to a particular category

    b) Illustrate the various operations and advantages of LDAP in detail   (4)

22. a) Is it necessary to allocate root and swap partition separately during the Linux   (7)   CO1 [K₂]

     Installation? Justify it.

    b) Outline the difference between Kernel and User Mode in Linux.   (7)

23. An organisation wishes to maintain the status about the working hours made by his employees. For that he uses the following tables.   CO2 [K₃]

    Emp (<u>eid: integer</u>, ename: string, age: integer, salary: real)

    Works (<u>eid: integer, did: integer</u>, pct_time: integer)

    Dept (<u>did: integer</u>, budget: real, managerid: integer)

An employee can work in more than one department; the pct_time field of the works relation shows the percentage of time that a given employee works in a given department. Resolve the following queries.

1. Print the names and ages of each employee who works in both Hardware and Software departments.
2. Print the name of each employee whose salary exceeds the budget of all of the departments that he or she work in.
3. Find the managerid's of managers who manage only departments with budgets greater than 1,000,000.
4. Find the enames of managers who manage the departments with largest budget.
5. If a manager manages more than one department, he or she controls the sum of all the budgets for those departments. Find the managerid's of managers who control more than 5,000,000.
6. Find the managerid's of managers

24. a) Distinguish between warning, notice, error and exception. Discuss about the different types of error handling techniques in PHP and how errors can be triggered and handled in PHP with suitable examples   (10) CO3 [K₂]

b) Mention any two security threats that are possible in PHP and explain how it can be prevented.   (4)

25. a) Write a python code to call a function called closest that takes a list of numbers L , a number n and returns the largest element in L that is not larger than n. For instance, if L=[1,6,3,9,11] and n=8,then the function should return 6, because 6 is the closest thing in L to 8 that is not larger than 8.   (8) CO4 [K₃]

b) How does a list differ from tuple? Discuss about the inbuilt methods and operations supported by lists in python.   (6)

26. a) Identify the features of packages and modules in PERL with suitable examples   (10) CO5 [K₂]

b) Differentiate between my, local and our keyword in PERL with necessary examples   (4)

27. Explain the concept of classes and OOP in Python.   CO4 [K₂]

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