FY-CS Sem-II Paper / Subject Code: 77301 / Programming with C Regular 04/4/19

[2½ Hours] [Total Marks: 75]

N.B. 1) All questions are compulsory.
2) Figures to the right indicate marks.
3) Illustrations, in-depth answers and diagrams will be appreciated.
4) Mixing of sub-questions is not allowed.

Q. 1 Attempt All (Each of 5Marks) (15M)

(A) Multiple Choice Questions

i. What will be the output of the following C code?

```
#include <stdio.h>
void main()
{
  while ()
    printf("In while loop ");
  printf("After loop\n");
}
```

a) In while loop After loop
b) Compile Time Error
c) After loop
d) Infinite loop

ii. What will be the output of the following C code?

```
#include <stdio.h>
void main()
{
  switch (printf("Do"))
  {
  case 1:
    printf("First\n");
    break;
  case 2:
    printf("Second\n");
    break;
  default:
    printf("Default\n");
    break;
  }
}
```

a) Do
b) DoFirst
c) DoSecond
d) DoDefault

iii. What is the output of the following C code?

```
#include <stdio.h>
int main()
{
  void foo(), f();
  f();
}
void foo()
{
  printf("2 ");
}
void f()
{
  printf("1 ");
  foo();
}
```

a) Compile Time Error
b) 1 2
c) 2 1
d) Depends on compiler

iv. Which of following logical operation can be applied to pointers? (Assuming initialization int *a = 2; int *b = 3;)
a) a | b
b) a ^ b
c) a & b
d) None of the mentioned

v. What is the output of the following code?

```
#include<stdio.h>
main()
{
  int n,i;
  n=f(6);
  printf("%d",n);
}
f(int x)
{
  if(x==2)
      return 2;
  else
  {
    printf("+");
    f(x-1);
  }
}
```

a) ++++2
b) +++++2
c) +++++
d) 2

(B) Fill in the blanks
(tokens, int, functions, unary operation, contiguous, strcmp(),single operation, void, continuous, strcat())
i. The _____ library function is used to concatenate one string to the end of another string.
ii. A C program is basically a collection of_____.
iii. In the C programming language, array elements always have _____ address.
iv. An operation with only one operand is called _____ operation.
v. The default return type of a function in C is _____.

(C) Give short answers for the following:
i. What is a structure? Give an example
ii. What is a pointer?
iii. Write the syntax of fopen?
iv. What is an escape sequence?
v. Give syntax of do..while() loop.

Q. 2 Attempt the following (Any THREE) (Each of 5Marks) **(15M)**
(a) Differentiate between compilers and interpreters.
(b) What are the various data types available in C? Explain the memory size and range of data possible.
(c) What are bitwise operators? Explain citing an example for each.
(d) Write a 'C' program to accept number and find out whether it is even or odd.

(e) Distinguish between If-else Structure and Switch Statement. Give example to support your answer.

(f) Trace the output of the following code:

i.
```
void main( )
{
int a = 4;
switch (a)
{
default : printf("In default");
case 1 : printf("In 1");
break;
case 2 : printf("In 2");
break;
}
}
```

ii.
```
void main( )
{
int i = 0, x = 0;
for (i = 1; i < 10; i ++)
{
if (i %2 = = 1)
x = x + 1;
else
x – –;
printf("%d", x);
}
}
```

Q. 3 Attempt the following (Any THREE) (Each of 5Marks) (15M)

(a) Write syntax and explain the use of the following functions:
- i. getch( )
- ii. getche( )
- iii. getchar( )
- iv. getc( )
- v. gets()

(b) Differentiate between pass by value and pass by reference. Support your answer with an example

(c) How are strings in C implemented? Explain with an example.

(d) What is an array? What are the advantages and disadvantages of an array?

(e) Write a program to copy one string to another without using standard library function.

(f) Trace the output of the following code

```
int fun(int n, int *fg)
{ int t, f;
 if(n <= 1)
 {
  *fg = 1;
  return 1;
 }
 t = fun(n-1, fg);
 f = t + *fg;
 *fg = t;
 return f;
}
int main( )
{
int x = 15;
printf ( "%d\n", fun (5, &x));
return 0; }
```

Q. 4 Attempt the following (Any THREE) (Each of 5Marks) **(15)**

(a) What are nested structures? Explain with an example.

(b) What are the types of files available in C? Explain the various file opening modes in C.

(c) Write a note on unions in C. Support your answer with an example.

(d) Explain malloc() and calloc() with syntax and example. How are they different?

(e) Write a program to accept Student information (Roll no., name, percentage of marks) for 'n' students (Dynamically allocated). Store this in file and display it in well format (Accept *'n'* from the user.)

(f) Trace the output of the following code:

i.
```
# include <stdio.h>
void main()
{ int i = 3, *j, k;
clrscr();
j = &i;
printf("%d\n", i**j * i+ *j);
}
```

ii.
```
# include <stdio.h>
void main()
{ int x[25];
x[0] = 100;
x[24] = 400;
printf("\n%d %d", *x, *(x+24)+*(x+0));
}
```

Q. 5 Attempt the following (Any THREE) (Each of 5Marks) **(15)**

(a) Give the difference between while() and do..while() loops. Use an example to support your answer.

(b) Explain any 2 library functions provided in 'C' language to manipulate strings.

(c) Write a program using recursive function to find factorial of a number accepted from the user.

(d) Write a program in C to accept a string and check if the string is palindrome or not. Print a suitable message.

(e) Explain the following with declaration syntax and example

i. pointer to array

ii. array of pointers

FY.C.S Paper / Subject Code: 77303 / Linux.

(Time 2½ Hours) [Total Marks: 75]

N.B. 1) All questions are compulsory.
2) Figures to the right indicate marks.
3) Illustrations, in-depth answers and diagrams will be appreciated.
4) Mixing of sub-questions is not allowed.
5) Assume suitable data if required or not given.

Q. 1 Attempt All(Each of 5Marks) (15)

(a) Multiple Choice Questions

1) **_____ represents user's home directory.**
(a) /
(b) \
(c) ~
(d) |

2) **_____ is not Linux distribution**
(a) Centos
(b) Fedora
(c) Ubuntu
(d) MS Windows

3) **How do you rename file "new" to file "old"?**
a) mv new old b) move new old c) cp new old d) rn new old

4) **Full form of SSH is_____**
(a) Secure Shell
(b) System Shell
(c) Source Shell
(d) Superuser Shell

5) **Consider a command "echo "My name is khan" | gawk '{$4="university"; print $4}" will print**
(a) My name is khan
(b) Khan
(c) university
(d) My name is univesity

(b) Fill in the blanks (copy, cp, \dev ,\bin, head , who, chmod) (5)

1) _____ command is used to copy files and directories?
2) _____ directory contain device special files
3) To display information of users ____ command is used.
4) _____ command is used to print first few lines of a file.
5) _____ is used to change file permissions.

(c) Short Answers (5)

1) State the rules for writing file name in Linux.
2) What is the need of cat command in Linux?
3) Define the term full duplex with respect to communication.
4) What do you mean by shell?
5) Give the name (path) of file containing user's password related information.

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Q. 2 Attempt the following (Any THREE)(Each of 5Marks) **(15)**

(a) Explain the relationship between kernel and shell with a neat diagram.

(b) What are the different points which make GUI more user friendly compare to command line interface?

(c) Justify the importance of Linux as OS on web services and mobiles.

(d) Discuss 'init' process along with its run levels.

(e) Explain the following options for shutdown process.

- -a
- -r
- -h
- Time
- Message

(f) Write use of following directories in Linux:

i) /etc
ii) /root
iii) /bin
iv) /sbin
v) /lib

Q. 3 Attempt the following (Any THREE) (Each of 5Marks) **(15)**

(a) Write a note on following:

- Launcher
- Dash
- Workspaces

(b) State the purpose of following commands:

- nslookup
- dig
- arp
- factor
- info

(c) What do you mean by environmental variable? Explain following environmental variables in one line.

- PATH
- SHELL
- HOME
- PS2

(d) Explain the use of following commands:

- cal
- date
- wc
- echo
- whoami

(e) Explain in brief hard link and soft link with suitable example.
(f) Discuss following Linux Documentation commands: -
  i) man
  ii) info

Q. 4 Attempt the following (Any THREE) (Each of 5Marks) **(15)**
(a) Write a short note on FTP.
(b) Discuss test command for file comparison.
(c) State the purpose of following Regular Expressions:
^ , $, * ,() ,?
(d) Write a shell script to accept 2 numbers from user and one operator. Based on the operator entered perform addition, subtraction, multiplication and division.
(e) Write any five privileges of administrator.
(f) Assume that there is a file called "number" with following data

1	2
4	5
6	6
8	9

Write the purpose of awk command and command perform following:
1) Add two columns.
2) Find the average.
3) Multiply two columns.

Q. 5 Attempt the following (Any THREE) (Each of 5Marks) **(15)**
(a) State the use of ps command with any 4 options.
(b) Explain following file compression utilities:
  i) bzip2
  ii) gzip
(c) Describe following terms
  - HTTP
  - TCP/IP
(d) List option of ls- l command and describe each column in short.
(e) Discuss IP address.

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FY. CS

Paper / Subject Code: 77305 / Calculus.

Q.P. Code: 31173

(2 ½ Hours)

[Total Marks: 75]

N.B. 1) All questions are compulsory.
2) Figures to the right indicate marks.
3) Illustrations, in-depth answers and diagrams will be appreciated.
4) Mixing of sub-questions is not allowed.

Q. 1 Attempt All (Each of 5Marks) **(15M)**

(a) **Select correct answer from the following:**

1) In which of the following method, we approximate the curve of solution by the tangent in each interval.
a) Simpson's Method
b) Euler's method
c) Newton's method
d) None of the above

2) $\int 1/(9x^2 + 25)\ dx =$
a) $(3/5)\tan^{-1}(3x/5) + c$
b) $(1/9)\tan^{-1}(3x/5) + c$
c) $(3/5)\tan^{-1}(5x/3) + c$
d) $(1/15)\tan^{-1}(3x/5) + c$

3) A function is said to be invertible if and only if it is_____
a)Bijective b) injective c) Inflexion d) Surjective

4) $\lim_{x\to\infty} 7/2x =$
a)1 b)infinite c) zero d) None

5) If $f(x, y) = x^3y^3 + y^3 + 1$ then $f_x(x, y)$ is
a)$3x^2$ b) $3xy$ c) y^3x d) None

(b) **Fill in the blanks:**
(*continuous*, ∞, $(4i+5j)/41$, $(4i+5j)/31$, $-\infty$, e^x, derivative, $x - 3\log|x+3| + c$)

1. $\lim_{x\to\infty}(5 - 2x) =$ _____.
2. The derivative of e^x is _____.
3. Unit vector of $4i+5j$ is_____.
4. $\int x/(x+3)\,dx =$ _____
5. The rate of change of one variable with respect to another is called _____.

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(c) **Answer the following in one line**

1. Define Tangent Plane
2. Define Critical Point
3. Define the term Definite Integral
4. Evaluate $\int_{\pi/3}^{2\pi} \sin x \, dx$
5. Linearization of a function

Q. 2 Attempt the following (Any THREE) **(15M)**

(a) Show that $\lim_{x \to 1} 2x^2 + 3x - 4 = 1$

(b) Discuss the continuity of the function $f(x)=\sqrt{4-x^2}$

(c) Show that the function $f(x) = x^3 - 9x^2 + 30x + 7$ is always increasing.

(d) Find the relative extrema of $f(x) = 4xy - x^4 - y^4$ using both first and second derivative test.

(e) Using Newton's method find the approximate root for the equation $f(x)=x-\cos x$

(f) Divide 100 into two parts such that sum of their square is minimum.

Q. 3 Attempt the following (Any THREE) **(15M)**

(a) Evaluate $\int \sin^{-1}\sqrt{x} \, dx$

(b) Evaluate $\int_{\frac{\pi}{6}}^{\frac{\pi}{3}} \frac{1}{(1+\cot x)} dx$

(c) Estimate $\int_0^4 x^2 \, dx$ using simpson's rule and n = 4.

(d) Solve the differential equation
$\sec^2 x \tan y \, dx + \sec^2 y \tan x \, dy = 0$

(e) Solve $dy/dx = 1 - y$; $y(0) = 0$, find $y(0.1)$ and $y(0.3)$ using Euler's method. Taking $h = 0.1$.

(f) Solve the differential equation
$(x+1)\frac{dy}{dx} - y = e^x (x+1)^2$

Q. 4 Attempt the following (Any THREE) **(15)**

(a) Show that $f(x, y) = 2x^2 + 3xy$ is continuous at (2, 3)

(b) Find the second order derivatives of $f(x,y)=x^2y^3 + x^4y$

(c) If $z=x^2y$, $x=t^2$ and $y=t^3$ Use chain rule to find $\frac{dz}{dt}$.

(d) Find the directional derivative of $f(x, y)=x^3 + 2xy^2$ at the point (-2, -3) in the direction of the vector $a = i + j$

(e) Find the gradient vector of f(x, y) if $f(x, y) = 10 - 8x^2 - 2y^2$. Evaluate it at (2, 3)

(f) Find the equation for the tangent plane and parametric equations for normal line to the surface $z=x^2y$ at the point (2, 1, 4)

Q.P. Code: 31173

Q. 5 Attempt the following (Any THREE) **(15)**

(a) Locate all relative extrema and saddle points of
$f(x, y) = 3x^2 - 2xy + y^2 - 8y$

(b) Solve the differential equation
$$\frac{dy}{dx} = (4x + y + 1)^2$$

(c) Draw the graph of $y = 4 - 3x^2 + x^3$ and find the intervals on which the function y is increasing and decreasing(draw the graph on the answer sheet itself)

(d) Find the asymptotes of the function $y = \frac{x}{(x+1)(x+2)^2}$

(e) Solve the differential equation
$$dy/dx = (4x + y + 1)^2$$

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Q. P. Code: 33069

(2 ½ Hours) [Total Marks: 75]

N.B. 1) All questions are compulsory.
2) Figures to the right indicate marks.
3) Illustrations, in-depth answers and diagrams will be appreciated.
4) Mixing of sub-questions is not allowed.

Q. 1 Attempt All (Each of 5Marks) **(15M)**

(a) Select appropriate option from following.

1 Python array is --
a)Built in data type b) Additional data type c) Abstract data type d) Both a&c

2 What is the worst case for linear search?
a) O(nlogn) b) O(logn) c) O(n) d) O(1)

3 Process of inserting an element in stack is called _____
a) Create b) Push c) Evaluation d) Pop

4 The type of expression in which operator succeeds its operands is?
a) Infix Expression b) Prefix Expression c) Postfix Expression
d) None of the mentioned

5 . In linked list each node contain minimum of two fields. One field is data field to store the data second field is?
a) Pointer to character b) Pointer to integer c) Pointer to node d) Node

(b) Fill in the blanks

1. An ------ is object providing mechanism for general traversal.
2. Queue is called as ------- type of structure.
3. Binary search works only with -------- collection.
4. In a stack, if a user tries to remove an element from empty stack it is called _____
5. In -------linked list last node pints to first node.

(c) Short Answers.

1. State any application where stack can be used.
2. With reference to Date ADT, what will be the output of statement d=Date() ?
3. The type of expression in which operator succeeds its operands is?
4. What is a hash table?
5. What is a full binary tree?

Q. 2 Attempt the following (Any THREE)(Each of 5Marks) **(15M)**

(a) What is ADT? Explain the types of operation on ADT.

(b) How to implement array as an ADT?

(c) Write note on SET ADT.

(d) What is binary search? Explain with example.

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Q. P. Code: 33069

(e) Write a program to accept city name from user & display message whether that name exists in predefined list?

(f) Arrange this list 5,10,44,20,15 in ascending order by using selection sort. Write down step by step process.

Q. 3 Attempt the following (Any THREE) (Each of 5Marks) **(15M)**

(a) What is linked list? Explain types of linked lists

(b) Write a program to implement stack using python list with required functionality.

(c) What is doubly linked list? Define function to append node in doubly linked list.

(d) How stack can be used to check parenthesis balancing?

(e) What is postfix notatin? Convert following expressions to postfix.

1. (a+b)/c 2. a/b*c-d+e 3. a – b/(a+b) 4. a * b *c +d – e

(f) Explain the concept of priority queue.

Q. 4 Attempt the following (Any THREE) (Each of 5Marks) **(15)**

(a) What is recursion? State its properties.

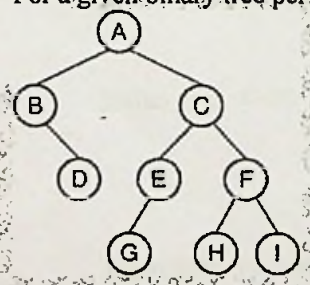
(b) With example explain clustering in hashing.

(c) Discuss the steps in quick sort.

(d) With respect to tree structure define following terms:
Root , path , depth , width, height

(e) Define recursive function to calculate nth term of Fibonacci series. Test this function to print 10 terms of series.

(f) For a given binary tree perform inorder, preorder,and postorder traversal.



Q. 5 Attempt the following (Any THREE) (Each of 5Marks) **(15)**

(a) Write a program to read 10 numbers and arrange them in descending order using bubble sort.

(b) What is list traversal? Explain algorithm for traversing singly linked list.

(c) Write a note on recursive call tree working with runtime stack .

(d) Build an expression tree for following expressions:
1. a-(b*c+d) 2. (a-c*d)+x/y

(e) What is binary search tree? With example explain insertion of node in this tree.

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(2½ Hours) [Total Marks: 75]

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Q. 1 Attempt the following

(a) Select the correct alternative (5M)

(i) _____ is one of the gas in GHG
a) Carbondioxide c) Oxygen
b) Nitrogen d) none

(ii) It measures the ability of system to work on various platform
a) Supportability c) Portability
b) Dependability d) Efficiency

(iii) Server which contains machine with power and network cabling for each unit.
a) Blade server c)Both a and b
b) Rack server d)None

(iv) _____ copies files based on their temporal locality to other disks and cannot be applied to online storage.
a) MAID c) RAID
b) Green Store d) PDC

(v) Reuse, recycle, _____ and Earth chater are well known Sustainability Principles.
a) Refurbish c) Reduce
b) Regenerate d) None

(b) Fill in the blanks (5M)

(Triple Bottom Line, Rescrap, Refurbish, Dependability, Efficiency,Table base Language, Goods-Dominant Logic, Service-Dominant Logic.)

(i) The 3 Rs of green IT are Reuse, Recycle and _____.
(ii) _____ is one of the usage related attributes.
(iii) TBL stands for _____.
(iv) _____ uses value in use concept.
(v) _____ is one of the process related attributes.

(c) Answer the following in one or two lines: (5M)

(i) Define Green IT.
(ii) List techniques used in data efficiency.
(iii) What do you mean by SAN.
(iv) What are different levels of information flow
(v) What is SICT?

Q. 2 Attempt the following (Any THREE) **(15M)**

(a) Explain with the help of diagram 3 R's of Green IT.
(b) Explain in details Impacts of IT on environment.
(c) Define attributes. List and explain different sustainable software attributes.
(d) What is context awareness. How can it help to save energy.
(e) What are the e-ways of disposal technique
(f) List and explain the various green IT devices

Q. 3 Attempt the following (Any THREE) **(15M)**

(a) Explain the concepts of: server farm, cloud computing.
(b) Explain the various components of IT Infrastructure.
(c) Explain the various energy management techniques for hard disk.
(d) Write a short note on Business Drivers of green IT strategies.
(e) Explain any two System Level Management.
(f) What are the various organizational considerations in a green IT strategy.

Q. 4 Attempt the following (Any THREE) **(15M)**

(a) Write a short note on Organizational Level Information
(b) Explain the various sustainability hierarchy models.
(c) Distinguish between green IT and SITS
(d) What are the various inter-organizational enterprise activities? Explain them
(e) Write a short note on LCA.
(f) What is SITS strategic framework.

Q. 5 Attempt the following (Any THREE) **(15M)**

(a) Write a short note on green washing.
(b) Explain the various processor power states.
(c) What is green network protocol and its objectives.
(d) What is green readiness. Explain.
(e) Write a short note on NAS, SAN, DAS.

(Time:2 ½ Hours) [Total Marks: 75]

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Q. 1 Attempt All the questions **(15M)**

Multiple choices questions

(a) 1 The mean of the binomial distribution is ----------
a) npq b) np c) pq d) nq
2 Cumulative distribution function is a --------- continuous function
a) Right b) Left c)Bounded d) None of above
3 The critical region is region of ----------
a) Rejection b) Acceptance c) positive d) Negative
4 For a two sided test the Rejection region lies at ----------tails
a) One b)two c)both a & b d) None of above
5 Chi square test of association is used for --------- data
a) Qualitative b)Quantitative c) Time series d)Geographic

(b) **Fill in the blanks.**
1 The curve of Normal distribution is ----------
2 Number of children in a family is a ---------- random variable
3 ANOVA is used for testing ----------
4 Power of statistical test must always be ----------
5 Sign test is a ---------- test

(c) **Answer in one sentence**
1 Define discrete random variable with an example
2 State one property of the Normal distribution
3 Write the sample space when a coin is tossed two times
4 Describe the curve of the F distribution
5 Define type I error for a statistical hypothesis

Q. 2 Attempt the following (Any THREE) **(15M)**

(a) Define probability density function ,cumulative distribution function and expectation for a continuous random variable X.

(b) State the density function of the chi square distribution and any two properties of it.

(c) Define t distribution. Write any two properties of the same

(d) E xplain briefly the Normal distribution with the help of its curve

(e) Define a Binomial distribution ? State the mean and variance of the Binomial distribution

(f) Chances that a student of Mumbai university clears UPSC exam are 70 %. If 20 students appear for the exam, what is the chance that more than 3 students and exactly 8 students will clear the exam.

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Q. 3 Attempt the following (Any THREE) **(15M)**

(a) Define null and alternative hypothesis. State an example of null hypothesis

(b) Describe the paired t test with an example .

(c) Distinguish between type I and type II error

(d) Describe the large sample test for testing $H0: \mu = \mu 0$ against $H1: \mu > \mu 0$

(e) Explain briefly ANOVA with an example of one way ANOVA

(f) A health club advertised a weight reducing program and claimed that it will reduce the weight in 3 months. To check the claim 10 persons before and after weight was noted. Does the data suppot the claim at 1 % Level of significance. Table value=2.822

No	1	2	3	4	5	6	7	8	9	10
Wt before	61	65	68	72	75	73	74	66	69	82
Wt after	52	54	60	62	67	66	64	59	60	76

Q. 4 Attempt the following (Any THREE) **(15)**

(a) Explain in short Non parametric tests

(b) Write a short note on Wilcoxon's signed rank test

(c) State the test statistics for Mann Whitney U test and Kruskal Wallis test

(d) Explain the concept of post hoc Analysis of variance

(e) Write a short note on Chi square test of Association

(f) Test if there is an association between gender and acceptance of application for the following data.(Table value at 5% LOS=3.84)

	Application successful	Application not successful	TOTAL
Male	23	40	63
Female	31	39	70
TOTAL	54	79	133

Q. 5 Attempt the following (Any THREE) **(15)**

(a) Define probability mass function and expectation of a discrete random variable

(b) Define one sided and two sided hypothesis

(c) Write a short note on sign test

(d) Differentiate between parametric and non parametric tests

(e) If X follows binomial (3,0.5) find the mean and variance

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(2½ Hours) [Total Marks: 75

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4) Mixing of sub-questions is not allowed.

Q. 1 Attempt all. (Each of 5 marks) (15

(a) Multiple Choice Questions (Choose the correct alternative.) (5M

(i) The _____ method is used to display the current working directory.
(a) getcwd()
(b) chdir()
(c) mkdir()
(d) rmdir()

(ii) Grid is used for _____.
(a) Positioning widgets at absolute locations.
(b) Arranging widgets.
(c) Packing widgets into a cavity.
(d) All ot the above.

(iii) Python exceptions are caught by the _____ keyword.
(a) catch
(b) except
(c) try
(d) throw

(iv) This method binds the socket to address.
(a) socket.socket()
(b) socket.accept()
(c) socket.bind(address)
(d) socket.listen()

(v) The _____ is a standard tkinter widget used to implement one of many selections buttons.
(a) Option button
(b) CheckBox Button
(c) Radio Button
(d) None of the mentioned

(b) Fill in the blanks. (5M
{TCP/IP, UDP, SMTP, FTP, os.remove('file'), os.delete('file'), readline(), readlines(), focus, create }

(i) To draw things in the canvas, use the _____ methods to add new items.
(ii) _____ function is used to read single line from file.
(iii) _____ deletes a file.
(iv) _____ protocol is used to send mail.
(v) Connected less communication can be establish using _____.

(c) Short Answers Write answers in one or two lines. (5M

(i) Finally clause
(ii) Attributes of file object
(iii) mysql connector
(iv) socket() function
(v) Connection oriented communication in python

Q.2 Attempt the following:(ANY THREE) (Each of 5 marks) (15M

(a) Write a python program to read contents of 'first.txt' file and write same content in 'second.txt' file.

(b) What are various modes of file object? Explain any five.

(c) Define Iterator with example.

(d) Explain exception handling with example using try, except, raise keywords.

(e) Give syntax and example of following functions.

(i) mkdir

(ii) chdir

(f) Differentiate between match() and search() function. Explain with example.

Q.3 Attempt the following:(ANY THREE) (Each of 5 marks) (15M

(a) What is GUI programming? Write advantage and disadvantage.

(b) Write a python program to accept a number from user on entry box. Display whether entered number is even or odd on message box as user clicks on show button.

(c) Explain any five options of pack() method.

(d) Discuss event handling formats. (any five)

(e) List the widgets which provided by tkinter module. Explain any four.

(f) Write a python program to display five graphical shapes on Canvas.

Q. 4 Attempt the following:(ANY THREE) (Each of 5 marks) (15M)

(a) Write a python program to create connection oriented server program.

(b) How to read properties of URL? Explain it with example.

(c) What is database connectivity in Python? Explain.

(d) Give a short note on SMTP. Explain how to create SMTP object in python.

(e) Explain exception in database connectivity in python.

(f) Establish a connection between python and database and write a python to display all records from Employee table(Empno, Empname, Dept, Salary). Assume records are already inserted in table.

Q. 5 Attempt the following:(ANY THREE) (Each of 5 marks) (15M

(a) Explain transaction with rollback and commit in python.

(b) What is regular expression? State and explain regular expression patterns. **(any four)**

(c) How to use fonts and colours in python? Specify example.

(d) Which functions are used to find file position? Explain with example.

(e) Write a short note on Layout Manager.

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