DHARMSINH DESAI UNIVERSITY, NADIAD
FACULTY OF TECHNOLOGY
B.TECH. SEMESTER II [EC/CE/IT]
SUBJECT: (CT215) C PROGRAMMING -II

Examination	**: Second Sessional**	**Seat No.**	**: _____**
Date	**: 14/03/2018**	**Day**	**: Wednesday**
Time	**: 3:45 to 5:00**	**Max. Marks**	**: 36**

INSTRUCTIONS:
1. Figures to the right indicate maximum marks for that question.
2. The symbols used carry their usual meanings.
3. Assume suitable data, if required & mention them clearly.
4. Draw neat sketches wherever necessary.

Q.1 (A) Do as directed. **[12]**

(1) How many bytes are allocated for following declarations? **[1]**
*(a) int *a[5] and (b) int (*a)[5]*

(2) What is the value of integer variable x and y? **[2]**
x =*p1 * −*p2 /4 +5;
y= 3 * *p1 + *p2;
Where *p1 = 4 and *p2 = 2

(3) Find out the errors in the following expressions: (Where p1 and p2 are pointer to integers) **[2]**
(a) int b = 5* - *p2/*p1; (b) int *p = &a, a;

(4) State True or False: **[2]**
(a) A member in a structure can itself be a structure.
(b) Structures are always passed to functions by pointers.

(5) What will be the output of the following code? **[2]**

```
void main(){
union emp{
float salary;
double allowance;};
struct person{
char name[20];
unsigned age:4;
unsigned height:6;
union emp x;
}p[100];
printf("%d\n",sizeof(p));}
```

(B) Choose an appropriate(s).

(1) What is the meaning of **ptr++->p* where *ptr* is pointer to structure and *p* is pointer inside the structure. **[1]**
(a) Increments *ptr* after accesing whatever it points to
(b) Increments the value pointed by *p*
(c) Increments the value pointed by *ptr->p*
(d) None of above.

(2) Given the statement: ***xyz.abc.e=200;*** Which of the following is true? **[1]**
(a) Structure variable xyz is nested within structure e
(b) Structure variable abc is nested within structure xyz
(c) Structure variable xyz is nested within structure abc
(d) None of the above

(3) Given the declaration **[1]**

```
struct item_bank{
int number;
double cost;};
```

Which of the following are correct statements for declaring one dimensional array of structures of type ***struct item_bank*** ?
(a) int item_bank items[10];
(b) struct item_bank items[10];
(c) struct item_bank items(10);
(d) struct items[10] item_bank;

Q.2 Attempt ***Any Two*** from the following questions. **[12]**

(1) Write a structure named as *hotel* which should have members like hotel name, hotel star rating and tariff per day. Write a user defined function which will find and display the information of a hotel having highest tariff per day from ten hotels. **[6]**

(2) Write a structure named as *country* which should have members like country name, population of a country and literacy level. Write a program which will sort and display the information of ten countries in descending order of population. **[6]**

(3) Write a Program to show the use of: *Structure within Structure* and *Array of Structure.* **[6]**

Q.3 (1) What will be the output of following code? **[4]**

(a)
```
int main( )
 {
    int *p, a[5]={1,2,3,4,5};
   p=a;
   while(p<&a[4])
    printf("%d %d\n",*p,*p++);
   return 0;
 }
```

(b)
```
char* myFunc (char *ptr){
        ptr += 2;
       return (ptr);
}
int main( ){
   char *x=”HELLO”, *y;
   y = myFunc (x);
   printf(“%c\n”,*y);
   printf (“ %s \n", y);
   return 0;}
```

(2) Write an user defined function *Strcat( )* which will concatenate two stings without using inbuilt function. Pass pointer as an argument of function. **[4]**

(3) Differentiate the following terms related to pointer. **[4]**

a) *int *x( );* and *int (*x) ( );* b) *++*ptr* and **++ptr* where ptr is pointer variable

OR

Q.3 (1) Write a user defined function *Lagest( )* only which will find largest number from an array of 10 element. Pass pointer as an argument of function and Use function returning pointer concept. **[6]**

(2) What is the value(character/address) of following expressions? **[6]**

*char *city[3] = {“Baroda” , “Ahmedabad”,”Surat”};*

a) **(city+1)+4* b) ***(city+1)* *c) *(city+1)*

d) **city+3* *e*) *(*(*(city+1)+2)* f) ***city+1*