

Name: Biproy

Id: 191-15-12976

Section: M

Ans to the question no 1

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
#include<stdlib.h> void
main()
{
char s[20],c; int
state=0,i=0;
clrscr(); printf("\n Enter a
string:"); gets(s);
while(s[i]!='\0')
{
switch(state)
{
case 0: c=s[i++]; if(c=='a')
state=1; else
if(c=='b')
state=2; else
state=6; break;
case 1: c=s[i++];
if(c=='a')
state=3; else
if(c=='b')
```

```
state=4; else
state=6; break;
case 2: c=s[i++];
if(c=='a')
state=6;
else if(c=='b')
state=2; else
state=6; break;
case 3: c=s[i++];
if(c=='a')
state=3; else
if(c=='b')
state=2; else
state=6; break;
case 4: c=s[i++];
if(c=='a')
state=6;
else if(c=='b')
state=5; else

state=6; break;
case 5: c=s[i++];
if(c=='a')
state=6;
else if(c=='b') state=2; else state=6; break;
case 6: printf("\n %s is not recognised.",s);
exit(0);
}
}
```

```
if(state==1) printf("\n %s is accepted under  
rule 'a'",s); else if((state==2) || (state==4))  
printf("\n %s is accepted under rule 'a*b+'",s);  
else if(state==5) printf("\n %s is accepted  
under rule 'abb'",s); getch();  
}
```

Ans to the question no 2

```
#include<stdio.h>
```

```
#include<conio.h>
```

```
#include<ctype.h>
```

```
void main()
```

```
{
```

```
char a[10];
```

```
int flag, i=1;
```

```
clrscr();
```

```
printf("\n Enter an identifier:");
```

```
gets(a);
```

```
if(isalpha(a[0]))
```

```
flag=1;
```

```
else
```

```
printf("\n Not a valid identifier");
```

```
while(a[i]!='\0')
```

```
{
```

```
if(!isdigit(a[i])&&!isalpha(a[i]))
```

```
{
```

```
flag=0;
```

```
break;
```

```
}
```

```
i++;
```

```
}
```

```
if(flag==1)
```

```
printf("\n Valid identifier");
```

```
getch();
```

```
}
```

Ans to the question no 3

```
#include<stdio.h>
```

```
#include<ctype.h>
```

```
#include<stdlib.h>
```

```
#include<string.h>
```

```
#include<math.h> void
```

```
main()
```

```
{
```

```
int i=0,j=0,x=0,n; void *p,*add[5];
```

```
char ch,srch,b[15],d[15],c;
```

```
printf("Expression terminated by $:");
```

```
while((c=getchar())!='$')
```

```
{
```

```
    b[i]=c;
```

```
    i++;
```

```
}
```

```

n=i-1; printf("Given
Expression:");

i=0;

while(i<=n)

{

    printf("%c",b[i]);

    i++;

}

printf("\n Symbol Table\n");

printf("Symbol \t addr \t type");

while(j<=n)

{

    c=b[j];

    if(isalpha(toascii(c)))

    {

        p=malloc(c);  add[x]=p;  d[x]=c;

        printf("\n%c \t %d \t identifier\n",c,p);

        x++;

    }

    else

    {

        ch=c;  if(ch=='+' || ch=='-'

' || ch=='*' || ch=='=')

        {

            p=malloc(ch);  add[x]=p;  d[x]=ch;

            printf("\n %c \t %d \t operator\n",ch,p);

```

```
x++;
```

```
j++; }}}
```