**Practical 1**

**Question 1**

PROGRAM helloworld

WRITE(\*,\*) "Hello world"

END PROGRAM helloworld

**Question 2**

**Question 3**

PROGRAM Area\_and\_Vol

real :: radius

real, PARAMETER :: pi=3.141592

real :: area

real :: volume

WRITE(\*,"(A)") "Type in the radius:"

READ\*, radius

area = pi\*radius\*\*2.0

volume = (4.0\*pi\*radius\*\*3.0)/3.0

WRITE(\*,"(A26,F5.1,A4,F6.1)") &

"Area of circle with radius ",&

radius, " is ", area

WRITE(\*,"(A28,F5.1,A4,F6.1)") &

"Volume of a sphere with radius ",&

radius, "is ", volume

END PROGRAM Area\_and\_Vol

**Question 4**

PROGRAM q4

real :: pi

pi = 4.0\*atan2(1.0,1.0)

WRITE(6,"(E12.2)") pi

WRITE(6,"(E12.4)") pi

WRITE(6,"(E12.6)") pi

WRITE(6,"(F12.2)") pi

WRITE(6,"(F12.4)") pi

WRITE(6,"(F12.6)") pi

WRITE(6,"(G12.2)") pi

WRITE(6,"(G12.4)") pi

WRITE(6,"(G12.6)") pi

END PROGRAM

**Question 5**

PROGRAM q5

integer :: a

real :: b

OPEN(10,file="files/statsa")

READ(10,"(I5)") a

READ(10,"(F5.2)") b

WRITE(6,"(I5)") a

WRITE(6,"(F5.2)") b

END PROGRAM

**Practical 2**

**Question 1**

PROGRAM p2q1

IMPLICIT NONE

INTEGER :: i

DO i = 10, 0, -1

if (i == 0) then

WRITE(6,\*) "i: ", i, ", is zero"

EXIT

else if (mod(i,2)==0) then

WRITE(6,\*) "i: ", i, " is even"

else if (mod(i,2)/=0) then

WRITE(6,\*) "i: ", i, "is odd"

end if

END DO

END PROGRAM p2q1

**Question 2**

PROGRAM triangles

integer :: side1

integer :: side2

integer :: side3

WRITE(\*,"(A)") "Type in length 1:"

READ\*, side1

WRITE(\*,"(A)") "Type in length 2:"

READ\*, side2

WRITE(\*,"(A)") "Type in length 3:"

READ\*, side3

if ((2\*MAX(side1,side2,side3) > side1+side2+side3)) then

WRITE(6,\*) "This is not a triangle :("

end if

if ((2\*MAX(side1,side2,side3) < side1+side2+side3)) then

WRITE(6,\*) "This is a triangle :)"

if (side1 == side2 .AND. side2 == side3 .AND. side3 ==side1) then

WRITE(6,\*) "This is an equilateral triangle"

else if ((side1 == side2)&

.OR. (side2 == side3)&

.OR. (side3 == side1)) then

WRITE(6,\*) "This is an isosceles triange"

end if

end if

END PROGRAM triangles

**Question 3**

**Practical 3**

**Question 1**

1) 1 dimensions, 1:10 bounds, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 i= shape?

2) 2 dimensions), 0:2 bounds, 0,0, 1, 2 = shape,

3) 3 dimensions, -1:3 bounds, -1, 0, 1, 1, 2, 3, 1, 2 - shapei

4) 2 dimensions, 0:3 bounds,

**Question 3**

PROGRAM p3q3

IMPLICIT NONE

INTEGER, DIMENSION(1:8, 1:8) :: Chess

integer :: i,j

!Chess(1:8,1:8) = 0

!Chess(1:8:2,1:8,2) = 1

do i=1,8

do j=1,8

if(mod(i,2) == 0) then

if (mod(j, 2) == 0) then

Chess(j,i) = 0

else

Chess(j,i) = 1

endif

else

if (mod(j, 2) /= 0) then

Chess(j,i) = 0

else

Chess(j,i) = 1

endif

end if

enddo

enddo

WRITE(6,'(8(8I1,/))') Chess

END PROGRAM p3q3

**Practical 4**

**Question 1**

PROGRAM p4q1

REAL :: r

REAL :: deg

REAL :: x

REAL :: y

REAL :: rad

REAL, PARAMETER :: pi=3.14159

WRITE(6, \*) "What is the radius?"

READ\*, r

WRITE(6,\*) "What is the angle (in degrees)?"

READ\*, deg

rad = deg \* (pi/180)

x = r \* COS(rad)

y = r \* SIN(rad)

WRITE(6,\*) "The coordinates are (", x, ",", y, ")"

END PROGRAM p4q1

**Question 2**

PROGRAM p4q2

IMPLICIT NONE

REAL :: no1

REAL :: no2

REAL :: ans

WRITE(6,\*) "No. 1:"

READ\*, no1

WRITE(6,\*) "No. 2:"

READ\*, no2

CALL SUMTHEM(no1,no2,ans)

write(\*,\*) "Answer =", ans

CONTAINS

SUBROUTINE SUMTHEM(Number1,number2,answer)

REAL :: number1,number2,answer

answer = number1 + number2

END SUBROUTINE SUMTHEM

END PROGRAM p4q2

**Question 3**

PROGRAM p4q3

IMPLICIT NONE

REAL :: no1,no2,Ans

WRITE(6,\*) "No. 1:"

READ\*, no1

WRITE(6,\*) "No. 2:"

READ\*, no2

Ans = SUMTHEM(no1,no2)

write(\*,\*) "Answer =", Ans

CONTAINS

REAL FUNCTION SUMTHEM(Number1,number2)

REAL :: number1,number2

SUMTHEM = number1 + number2

END FUNCTION SUMTHEM

END PROGRAM p4q3