5) Write a Python program to store second year percentage of students in array. Write function for sorting array of floating point numbers in ascending order using a) Insertion sort b) Shell Sort and display top five scores

***CODE :-***

def insertion\_sort(arr):

for i in range(1, len(arr)):

key = arr[i]

j = i - 1

while j >= 0 and key < arr[j]:

arr[j + 1] = arr[j]

j -= 1

arr[j + 1] = key

return arr

def shell\_sort(arr):

n = len(arr)

gap = n // 2

while gap > 0:

for i in range(gap, n):

temp = arr[i]

j = i

while j >= gap and arr[j - gap] > temp:

arr[j] = arr[j - gap]

j -= gap

arr[j] = temp

gap //= 2

return arr

def display\_top\_scores(arr, top\_n=5):

print(f"Top {top\_n} scores:")

for score in arr[-top\_n:][::-1]:

print(score)

def main():

scores = [70.5, 85.0, 91.5, 66.9, 88.0, 94.3, 74.2, 86.9, 100.0, 80.1]

print("Original Scores:")

print(scores)

sorted\_scores\_insertion = insertion\_sort(scores.copy())

print("\nScores sorted using Insertion Sort:")

print(sorted\_scores\_insertion)

display\_top\_scores(sorted\_scores\_insertion)

sorted\_scores\_shell = shell\_sort(scores.copy())

print("\nScores sorted using Shell Sort:")

print(sorted\_scores\_shell)

display\_top\_scores(sorted\_scores\_shell)

if \_\_name\_\_ == "\_\_main\_\_":

main()

***OUTPUT :-***

