MARKING SCHEME & TOS

Subject: Computing
Paper : 2 - **Practical**
Level : Secondary **FOUR** Express
Exam : Preliminary Examinations
Year : 2018

Marking Scheme

Qn	Answer	Marks allocated	Remarks
Q1	**=SUM(B4:B18)**	**1**	
Q2	**=COUNT(B4:B18) or =COUNT(A4:A18)**	**1**	
Q3	**=MAX(C4:C18)-MIN(C4:C18)**	**1**	
Q4	**One** mark for working first row formula **One** mark for the rest **=VLOOKUP(C4,$D$25:$F$28,3,TRUE)**	**1** **1**	
Q5	**Two** mark for correct formula **One** mark for using ROUND function **=ROUND(B4*C4*D4,0)**	**2** **1**	
Q6	**One** mark for correct IF formula **One** mark for use of AND =IF(AND(B4>=50000, C4>5),"YES","NO")	**1** **1**	
	Total for Task 1	**10**	
Q7a	data = 10	**1**	
Q7b	shortest = 100 # Declare variable and assign a high value or initializing var **shortest** with the length of the first input	**1**	

	elif len(text) < shortest:
	        shortest = len(text)
		2	

	print("The shortest input length is ", shortest)	**1**	

Q7c	while " " in text: #Check if input contains spacing
	        text = input("Please enter the text again: ")
	WHILE loop used
		1
		1
		1	

Q8	data = int(input("Enter the number of data ")) # input Typecast to integer	 **1** **1**	
	Total for Task 2	**10**	

Qn	Answer	Marks allocated	Remarks
Q9	rejected = 0 # change to 0	**1**	
	age = int(input("Please enter student's age:")) # corrected syntax error	**1**	
	while age != 0 and result != 0: # <> to !=	**1**	

	if age < 14 or age > 18 or result <= 60:
	# Change 15 to 14, Change == to <=
	Both instant below must be changed to get the marks
	if age < 14: # Change 15 to 14
	if result <= 60: #Change == to <=
		2	

	rejected = rejected + 1 #Change - to +	**1**	
	else: #indentation	**1**	
	eligible = eligible + 1 # Eligible to eligible	**1**	
	age = int(input("Please enter student's age:")) #Change indentation	**1**	
	print("Number of students eligible is ", eligible) #Added , # corrected syntax error	**1**	
	Total for Task 3	**10**	
Q10	ınd store user input	**2**	
	Validation for input	**2**	
	Variable set up	**1**	
	Use of loops for 4 postmen for 5 days	**2**	
	Correct calculation and output of number of parcels collected each day	**1**	
	Correct calculation and output of average	**1**	
	Correct calculation and output of total	**1**	
Q11	Test: 12 lines of output	**3**	
	Output matches stored program	**2**	
Q12	Extend: Correct output	**3**	
Q13	Extend: Correct Input Entry	**2**	
	Total for Task 4	**20**	
	TOTAL	**50**	

Sample Python Code Answers for Task 2 to Task 4

Task 2 – Q7

```
longest = 0
shortest = 100 # Declare variable and assign a high value
total = 0
data = 10 # Change value to 10

for count in range(data):
    text = input("Please enter the text: ")

    while " " in text:  #Validation to check if input contains spacing
        text = input("Please enter the text again: ")

    if len(text) > longest:
        longest = len(text)

    elif len(text) < shortest:  # Added condition to check and store shortest length
        shortest = len(text)

    total += len(text)

print("The longest input length is ", longest)
print("The shortest input length is ", shortest)

average_length = total/data
print("Average length is ", average_length)
```

Task 2 – Q8

```
longest = 0
shortest = 100
total = 0
data = int(input("Enter the number of data input: ")) #User entry
for count in range(data):
    text = input("Please enter the text: ")
    while " " in text:
        text = input("Please enter the text again: ")
    if len(text) > longest:
        longest = len(text)
    elif len(text) < shortest:
        shortest = len(text)
    total += len(text)
print("The longest input length is ", longest)
print("The shortest input length is ", shortest)
average_length = total/data
print("Average length is ", average_length)
```

Task 3 – Q9

```
age = 0
results = float(0)
rejected = 0   # change to 0
eligible = 0
age = int(input("Please enter student's age:" ))  #Added (
result = float(input("Please enter mid-year exam overall results:"))
while age != 0 and result != 0:     # <> to !=
    if age < 14  or age > 18 or result <= 60:   # Change 15 to 14, Change == to <=
        if age < 14: # Change 15 to 14
            print("Age must be at least fourteen years")
        elif age > 18:
            print("Age must not be more than eighteen")
        if result <= 60:  #Change == to <=
            print("Mid-year exam overall results must be more than 60%")
        rejected = rejected + 1 #Change - to +
        print("Student is NOT eligible for job attachment programme.")
    else: #indentation
        print("Student is eligible for job attachment programme.")
        eligible = eligible + 1  # Eligible to eligible

    age = int(input("Please enter student's age:" ))    #Change indentation
    result = float(input("Please enter mid-year exam overall results:"))

print("Number of students eligible is ", eligible)  #Added ,
print("Number of students rejected is ", rejected)
```

Task 4 – Q10

```
# Practical Paper - Task 4

day_list=[]                   # A list to store all the inputs
week_total = 0                # Variable for total number of parcels collected by 4 postmen in 5 days
week_list =[]                 # A list to store the total for each day
day = 1                       # counter for day

while day <= 5:               #Loop to capture 5 days of data

   day_total = 0              # Variable for number of parcels collected in a day

   parcel = input("Enter parcels collected by the team: ")  # User input
   parcel_list = parcel.split(',')   #split the string input into a list

   #   Validation of data
   valid = True
   for item in parcel_list:  # Loop thru the list to check for valid input, 0 to 10
      if int(item)<0 or int(item)>10:
         print("Error – Please enter number 0 to 10.")
         valid = False   # Set to False to indicate data is not valid, note that the number of day remains
         break

   if valid == True:
      day_list += [parcel_list]          #Added to day_list
      for x in range(4):                 # Run the loop 4 times to add the total for the day
         day_total += int(parcel_list[x])

      week_list += [day_total]           #Append the total for the day to  the week list
      week_total += day_total            #Add to the total of the day to the total of the week
      day +=1                            #Increase the counter for day

for i in range(5): #loop to generate output
   print("Day", i+1, "\tThe team collected", week_list[i], "parcel(s)")


print("\n")
print("Average number of parcels\t\t", round(week_total/4))
print("Total number of parcels for the week\t", week_total)
```

Task 4 – Q12

```
# Extension
print("\n")
for i in range(4):        # for each postman
    postman_total = 0
    for j in range(5):     #for 5 days
        postman_total += int(day_list[j][i])
    if postman_total < 30:        #Print only if the parcels collected is more than 30
        print("Postman",i+1,"collected", postman_total, "parcels this week.")
```

Task 4 – Q13

```
day_list=[] # A list to store all the inputs
week_total = 0      # Variable for total number of parcels collected by x number of postmen in 5 days
week_list =[]   # A list to store the total for each day
day = 1      # counter for day

num_postman= int(input("Enter the number of postmen in the team:"))

while day <= 5: #Loop to capture 5 days of data
    day_total = 0   # Variable for number of parcels collected in a day
    parcel = input("Enter parcels collected by the team: ")  # User input
    parcel_list = parcel.split(',')   #split the string input into a list
    #    Validation of data
    valid = True
    for item in parcel_list:  # Loop thru the list to check for valid input, 0 to 10)
        if int(item)<0 or int(item)>10:
            print("Error – Please enter number 0 to 10.")
            valid = False
            break
    if valid == True:
        day_list += [parcel_list] #Added to day_list

        for x in range(num_postman):  # Run the loop x times (number of postmen) to add the total for the day
            day_total += int(parcel_list[x])
        week_list += [day_total] #Append the total for the day to  the week list
        week_total += day_total     #Add to the total of the day to the total of the week
        day +=1     #Increase the counter for day

for i in range(5): #loop to generate output
    print("Day", i+1, "\tThe team collected", week_list[i], "parcel(s)")
print("\n")
print("Average number of parcels\t\t", round(week_total/num_postman))
print("Total number of parcels for the week\t", week_total)

# Extension
print("\n")
for i in range(num_postman): # for each postman
    postman_total = 0
    for j in range(5): #for 5 days
        postman_total += int(day_list[j][i])
    if postman_total < 30:
        print("Postman",i+1,"collected", postman_total, "parcels this week.")
```