Question 1

Correct

Mark 1.50 out of 1.50

Flag question

Let SSTR = 6750 and SSE = 8000. Let $n_T = 20$. We want to test

$$H_0 : \mu_1 = \mu_2 = \mu_3 = \mu_4$$

$$H_1 : \text{At least one mean is different}$$

The mean square due to error (MSE) equals

Select one:

- a. 2250
- b. 1687.5
- c. 400
- d. 500 ✔

The correct answer is: 500

Question **2**

Correct

Mark 1.50 out of 1.50

Flag question

Given are 3 observations for two variables, x and y.

x	1	9	6
y	9	10	40

What is the value of the correlation coefficient?

Select one:

- a. -0.17
- b. 0.05
- c. -0.05
- d. 0.17 ✔

The correct answer is: 0.17

Question 3

Correct

Mark 1.50 out of 1.50

Flag question

In a completely randomized design involving four treatments, the following information is provided.

	Treatment 1	Treatment 2	Treatment 3	Treatment 4
Sample Size	45	23	10	22
Sample Mean	32	38	42	48

The overall mean (the grand mean) for all treatments is

Select one:

- a. 37.3
- b. 37.9 ✔
- c. 37.0
- d. 40.0
- e. 48.0
- f. 37.8

The correct answer is: 37.9

Question **4**

Correct

Mark 1.50 out of 1.50

Flag question

Given are 3 observations for two variables, x and y.

x	1	9	6
y	9	10	40

Find SSE.

Select one:

- a. 602.54 ✔
- b. 18.13
- c. 620.67

The correct answer is: 602.54

Question **5**

Correct

Mark 1.50 out of 1.50

Flag question

Given are 3 observations for two variables, x and y.

x	1	9	6
y	9	10	40

Find SSR.

Select one:

- a. 620.67
- b. 602.54
- c. 18.13 ✔

The correct answer is: 18.13

Question 6

Correct

Mark 1.50 out of 1.50

Flag question

An ANOVA procedure is used for data obtained from five populations. Five samples, each comprised of 30 observations, were taken from the five populations. The numerator and denominator (respectively) degrees of freedom for the critical value of F are

Select one:

- a. 4 and 145 ✔
- b. 5 and 20
- c. 4 and 20
- d. 4 and 95
- e. 4 and 120
- f. 4 and 99

The correct answer is: 4 and 145

Question 7

Correct

Mark 1.50 out of 1.50

Flag question

Given are 3 observations for two variables, x and y.

x	1	9	6
y	9	10	5

What is the estimated regression equation?

Select one:

- a. $\hat{y} = 7.84 + 0.03x$ ✔
- b. $\hat{y} = 15.69x + 0.74$
- c. $\hat{y} = 15.69 + 0.74x$
- d. $\hat{y} = 7.84x + 0.03$

The correct answer is: $\hat{y} = 7.84 + 0.03x$

Question **8**

Correct

Mark 1.50 out of 1.50

Flag question

Given are 3 observations for two variables, x and y.

x	1	9	6
y	9	10	40

Find SST.

Select one:

- a. 620.67 ✔
- b. 602.54
- c. 18.13

The correct answer is: 620.67

Question 9

Correct

Mark 1.50 out of 1.50

Flag question

Let SSTR = 6750 and SSE = 8000. Let $n_T = 20$. We want to test

$$H_0 : \mu_1 = \mu_2 = \mu_3$$

$$H_1 : \text{At least one mean is different}$$

The test statistic to test the null hypothesis equals

Select one:

- a. 4.22
- b. 0.84
- c. 8.02 ✔ This is not the correct answer. The correct answer was not included. The correct answer is 7.17. The system will consider all answers as correct for grading purposes only.
- d. 0.22
- e. 4.5

The correct answer was not included. The correct answer is 7.17. The system will consider all answers as correct for grading purposes only.

The correct answers are: 0.22, 0.84, 4.22, 4.5, 8.02

Question **10**

Correct

Mark 1.50 out of 1.50

Flag question

The critical F value with 8 numerator and 29 denominator degrees of freedom at significance 0.05 is

Select one:

- a. 3.64
- b. 3.20
- c. 3.33
- d. 1.89
- e. 2.28 ✔

The correct answer is: 2.28

Quiz 3 :

1. $MSE = \frac{SSE}{n_T - K} = \frac{8000}{20-4} = 500$

2. $r_{xy} = 0.17$ الآلة حاسبة

3. overall mean $= \frac{(45 \times 32) + (23 \times 38) + (10 \times 42) + (22 \times 48)}{45 + 23 + 10 + 22} = 37.9$.

4. $SSE = SST - SSR$

$\rightarrow SST = (n-1) s_y^2 = 2 (310.333\ldots) = 620.67$

$\rightarrow SSR = b_1^2 (n-1) S_x^2 = 0.55 \times 2 \times \ldots = 18.13$.

$\rightarrow SSE = 602.54$.

$S_x^2 = 16.3333\ldots$

$S_y^2 = 310.333\ldots$

$b_1^2 = 0.554872969$

} X.

5. $\uparrow SSR = 18.13$

6. $K = 5$
observation $= 30$ $\rightarrow n_T = 150$

$df_1 = K - 1 = 4$

$df_2 = n_T - K = 145$.

7. $\hat{y} = 7.84 + 0.03\ x$. الآلة حاسبة

8. $\uparrow SST = 620.67$

9. $MSTR = \frac{SSTR}{K-1} = \frac{6750}{2} = 3375$

$MSE = \frac{SSE}{n_T - K} = \frac{8000}{20-3} = 470.59$

} $\rightarrow F = \frac{MSTR}{MSE} = 7.17$.

10. Clear By F-table