Started on	Monday, 14 June 2021, 3:22 PM
State	Finished
Completed on	Monday, 14 June 2021, 3:44 PM
Time taken	22 mins 12 secs
Marks	12.00/12.00
Grade	**10.00** out of 10.00 (**100**%)

Question **1**

Correct

Mark 1.00 out of 1.00

8141299

List all the 2-combinations of $\{a, b, c\}$.

Select one:

○ a. ab, ac, bc

○ b. $abc, acb, bac, bca, cab, cba$

⦿ c. $\{a, b\}, \{a, c\}, \{b, c\}$ ✔

○ d. ab, ac, ba, bc, ca, cb

Question **2**

Correct

Mark 1.00 out of 1.00

8141299

If a task can be done either in one of n_1 ways or in one of n_2 ways, where none of the set of n_1 ways is the same as any of the set of n_2 ways, then there are **[...]** ways to do the task.

What is **[...]**?

Select one:

⦿ a. $n_1 + n_2$. ✔

○ b. $n_1 n_2$.

○ c. $n_1^{n_2}$.

○ d. None of these.

Question **3**

Correct

Mark 1.00 out of 1.00

8141299

How many bit strings of length 10 contain exactly three 1s?

Select one:

○ a. 2^{10}

⦿ b. $C(10,3)$ ✔

○ c.

○ d. $P(10,3)$

Question **4**

Correct

Mark 1.00 out of 1.00

8141299

How many bit strings of length 4 contain at least a 1?

Select one:

○ a. 4

○ b. 3

○ c. 16

⦿ d. 15 ✔

Question 5

Correct

Mark 1.00 out of 1.00

8141299

How many functions are there from a set of 10 elements to a set of 5 elements?

Select one:

- a. 0.
- b. 50.
- c. 10^5.
- d. 5^{10}. ✔

Question 6

Correct

Mark 1.00 out of 1.00

8141299

The number of 2-combinations of $\{a, b, c, d\}$ is

Select one:

- a. 9
- b. 6 ✔
- c. 24
- d. 12

Question 7

Correct

Mark 1.00 out of 1.00

8141299

Assume that the first floor in the B building at TLU has 6 small rooms and 3 large rooms. Each small room has 41 chairs, each large room has 81 chairs. How many chairs are there in the floor?

Select one:

- a. 489. ✔
- b. 131.
- c. 490.
- d. None of these.

Question 8

Correct

Mark 1.00 out of 1.00

8141299

How many dicimal strings of the form $a_1 a_2 a_3 a_4 a_5$?

Select one:

- a. 15.
- b. 10^5. ✔
- c. 50.
- d. 5^{10}.

Question 9

Correct

Mark 1.00 out of 1.00

8141299

Among 2000 new students (in the academic year 2019-2020, at TLU) there are at least **[...]** who have the same birthday.

(Suppose that a year has 365 days)

What is **[...]**?

Select one:

- a. 6. ✔
- b. 9.
- c. 8.
- d. 7.

Question **10**

Correct

Mark 1.00 out of 1.00

8141299

Suppose that each one of 100 students who are taking the MA101 course must do a test among a list of 25 tests. There are at least [...] students who do the same test.

What is [...]?

Select one:

- ○ a. 25.
- ○ b. 10.
- ⦿ c. 4. ✔
- ○ d. 5.

Question **11**

Correct

Mark 1.00 out of 1.00

8141299

A class at TLU has 40 English majors and 20 Japanese majors, knowing that there are 10 students who specialize in both English and Japanese.

How many students are there in the class?

Select one:

- ○ a. 70.
- ○ b. 60.
- ⦿ c. 50. ✔
- ○ d. 80.

Question **12**

Correct

Mark 1.00 out of 1.00

8141299

Suppose that a procedure can be broken down into a sequence of two tasks. If there are n_1 ways to do the first task and for each of these ways of doing the first task, there are n_2 ways to do the second task, then there are **[...]** ways to do the procedure.

What is **[...]**?

Select one:

- ○ a. n_2.
- ○ b. n_1.
- ⦿ c. $n_1 n_2$. ✔
- ○ d. $n_1 + n_2$.