

Surname: _____

Name: _____

I.D. Number: _____

FOR OFFICE USE ONLY
Examination Number

UNIVERSITY OF MALTA
Faculty of Health Sciences

Academic Proficiency Test (Sample Test Paper)

Date: 11 September 2020

Time: 10.00 - 11.30

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Examination Number

FOR EXAMINERS' USE
Total Number of Marks obtained by Candidate

UNIVERSITY OF MALTA
Faculty of Health Sciences

Academic Proficiency Test for the assessment of applicants who applied to join the Preparatory Course for the Bachelor of Science (Honours) Nursing course in terms of the 'adult learners clause'.

- Answer ALL of the following questions.
- A pass in EACH section is required for an overall pass.
- Choose *one* of the four options provided following each statement.

Section A. Basic Science

Mark: ____ /100

1. Homeostasis is best described as

- a. a state of harmony between people and nature
- b. a state of relative constancy in biological systems
- c. a state of absolute constancy found in all living things
- d. a state in which all things change at the same time

2. A solution that has a surplus of H⁺ atoms is a(n)

- a. neutral
- b. base
- c. water
- d. acid

3. The formula for carbon dioxide is:

- a. CO
- b. CD
- c. CO₂
- d. CO₃

4. Which of the following biochemicals is a primary source of energy in humans?

- a. Proteins
- b. Steroids
- c. Carbohydrates
- d. DNA

5. Which of the following biochemicals is found in the nucleus of cells in chromosomes and stores genetic information?

- a. RNA
- b. Protein
- c. DNA
- d. Carbohydrate

6. Proteins are made from

- a. amino acids
- b. nucleotides
- c. fatty acids
- d. none of the above

7. All matter is composed of tiny particles called _____ which consist of a nucleus containing _____ and neutrons.

- a. elements, atoms
- b. atoms, protons
- c. atoms, electrons
- d. isotopes, protons

8. Which response correctly lists the proper biological organization?

- a. Atoms, molecules, cells, tissues, organs
- b. Molecules, atoms, cells, organs, tissues
- c. Atoms, molecules, cells, organs, tissues
- d. Molecules, atoms, organs, cells, tissues

9. Osmosis

- a. is the movement of solute molecules from high to low concentrations
- b. occurs across a selectively permeable barrier when water moves to equalize solute concentrations
- c. is the movement of water across a plasma membrane via active transport
- d. all of the above

10. Water is an important component of the diet because

- a. it helps stabilize body temperature
- b. it is required for many chemical reactions
- c. it helps maintain normal concentrations of wastes and nutrients in the body
- d. All of the above

11. Which type of tissue has cells that are closely packed and cover the outside of the body?

- a. Connective
- b. Epithelial
- c. Muscular
- d. Nervous

12. The atmosphere is composed of various gases. The most abundant being

- a. Oxygen
- b. Nitrogen
- c. Carbon Dioxide
- d. Hydrogen

13. In the periodic table K stands for

- a. Kesium
- b. Potassium
- c. Phosphorous
- d. Keloid

14. In the periodic table Na stands for

- a. Selenium
- b. Niobium
- c. Nitrogen
- d. Sodium

15. Which of the following is the most muscular chamber of the mammalian heart?

- a. right atrium
- b. left atrium
- c. right ventricle
- d. left ventricle

16. All gases exchanged between air and blood in mammals occurs across the walls of the

- a. trachea
- b. bronchi
- c. alveoli
- d. bronchioles

17. Glucose is a

- a. protein
- b. disaccharide
- c. nucleic acid
- d. monosaccharide

18. Which of the following is a characteristic of arteries?

- a. They all contain valves which prevent backflow.
- b. They carry blood away from the heart.
- c. They are thin-walled blood vessels.
- d. They always carry oxygenated blood.

19. The individual functioning unit of a kidney that consists of a system of tubules and associated small blood vessels is called:

- a. renal capsule
- b. nephron
- c. glomerulus
- d. loop of Henle

20. Exchange of gases and nutrients between the blood and tissues occurs in the

- a. arteries
- b. arterioles
- c. capillaries
- d. veins

Section B. Basic Mathematical Skills

Mark: ____/100

1. Mrs. Abela has drunk 20% of a bottle of water. You ask her to drink a little more and she consumes another 15%. How much water *is left* in the bottle if it originally contained 500millilitres (mls)?

- a. 100
- b. 175
- c. 325
- d. 500

2. The remaining amount of fluid to be given to a patient by 'drip' is 250 milliliters which is 25% of the original amount. What was the original volume in the drip bag?

- a. 250
- b. 500
- c. 1000
- d. 2500

3. The doctor prescribes 1 gram of paracetamol every 4 hours. Each tablet contains 500 milligrams of paracetamol. How many tablets will you give the patient?

- a. 1
- b. 2
- c. 3
- d. 4

You may use this space for your rough work or calculations.

4. You worked 20 hours this week and earned €150. If you work 15 hours next week how much will you earn?

- a. 100.00
- b. 112.50
- c. 125.00
- d. 130.00

5. What are 85062 milligrams in grammes?

- a. 8.5062
- b. 85.062
- c. 850.62
- d. 8506.2

6. What are 350 millilitres in litres?

- a. .035
- b. .35
- c. 3.5
- d. 35

7. What are 100 micrograms in milligrams?

- a. .01
- b. .1
- c. 1
- d. 10

You may use this space for your rough work or calculations.

8. What are 2 grams in milligrams?

- a. 20
- b. 200
- c. 2000
- d. 20000

9. Five teenagers recorded their weight in kilograms with the following results:
65, 69, 61, 68, 57. Their average weight is:

- a. 66
- b. 64
- c. 67
- d. 59

10. A weather station in Norway recorded a temperature of -12°C on Monday. The following day the temperature was 7° higher. What was the temperature on Tuesday?

- a. 19°C
- b. -5°C
- c. -19°C
- d. 5°C

11. The doctor has prescribed 50 milligrams of Amoxicillin syrup. 125 milligrams in 5 millilitres (mls) of syrup is available. How many milliliters will you administer?

- a. 2
- b. 2.5
- c. 5
- d. 12.5

You may use this space for your rough work or calculations.

12. Adam is aged 12. Brenda is aged 8. They share 170 Euro between them in the ratio of their ages. How much does Adam receive?

- a. 60
- b. 102
- c. 120
- d. 80

13. If Leah is 6 years older than Alexia and John is 5 years older than Leah, and the total of their ages is 41. Then how old is Alexia?

- a. 8
- b. 10
- c. 14
- d. 19

14. A client is prescribed 0.5 milligrams of Digoxin. 250 microgram tablets are available. How many tablets will you give?

- a. 2
- b. 2.5
- c. 3
- d. 4

15. A patient is prescribed 1 milligram of diazepam. 2 milligram tablets are available. How many tablets will you give?

- a. 0.25
- b. 0.5
- c. 1
- d. 2

You may use this space for your rough work or calculations.

16. You invest €4,000 at 6% simple interest rate for 5 years. How much interest will you receive?

- a. €480
- b. €720
- c. €960
- d. €1200

17. The doctor has prescribed 1 litre of IV fluids to be given over 8 hours. How many millilitres should the patient receive in 1 hour?

- a. 100
- b. 125
- c. 150
- d. 225

18. You need to administer 100 millilitres of fluids over 1 hour. How many milliliters do you need to administer in 1 minute?

- a. 0.6
- b. 1.25
- c. 1.67
- d. 10

19. Find the value of x in the following equation : $\frac{2}{3}x = 8 + 4x$

- a. -2.4
- b. 2.4
- c. 1.3
- d. -1.3

You may use this space for your rough work or calculations.

20. $(\frac{1}{5} + \frac{1}{3}) \div \frac{1}{2} =$

- a. $\frac{1}{8}$
- b. $\frac{1}{4}$
- c. $\frac{4}{15}$
- d. $\frac{16}{15}$

Section C - Basic English:

Mark: ____ /100

For questions 1 to 13, tick the correct option to fill in the blank.

1. To _____, Joe didn't have his homework ready.

- a. no ones surprise
- b. no-ones surprise
- c. no ones' surprise
- d. no one's surprise

2. After the storm, uprooted trees _____ all over the ground.

- a. were laying
- b. lying
- c. were lying
- d. were laid

3. The first part of the test was on science, the second _____.

- a. on mathematics, and the third on english.
- b. on mathematics; and the third on English.
- c. on mathematics; and the third on English.
- d. on mathematics, and the third on English.

4. Last night the weather forecaster announced that _____ area has had in the past decade.

- a. this is the most rainy season the
- b. this has been the most rainy season the
- c. this was the most rainy season the
- d. this is the rainiest season the

5. Although Mandy is younger than her sister, Mandy _____ two.

- a. is the tallest of the
- b. is the taller of the
- c. is the most tall of the
- d. is the more taller of the

6. The origins of most _____.

- a. sports is unknown
- b. sports have been unknown
- c. sports are unknown
- d. sports has been unknown

7. _____ witnesses been sworn in yet?

- a. Has any of the
- b. Is any of the
- c. Are any of the
- d. Have any of the

8. The *Lusitania* _____ on May 7, 1915.

- a. sunk
- b. was sunk
- c. sank
- d. did sink

9. _____ the office now?

- a. Whos in
- b. Whose in
- c. Whos' in
- d. Who's in

10. Eating, drinking, and _____ at night were among her pleasures.

- a. to stay up late
- b. to remain up late
- c. staying up late
- d. trying to stay up late

11. He _____ his towel on the beach.

- a. has lain
- b. has laid
- c. have laid
- d. has lied

12. I would have lent you my notes if you _____me.

- a. would have asked
- b. could ask
- c. had asked
- d. could asked

13. Many scientists are still hoping _____ a cure for cancer.

- a. to have found
- b. to find
- c. to found
- d. to have find

14. After practice, the boy's football team stated, "We're famished!"

Famished means

- a. Fatigued
- b. Hungry
- c. Excited
- d. Ready

15. The newborn baby was enamored with the rattle.

Enamored means

- a. Fascinated
- b. Happy
- c. Unsure what to do
- d. Aggravated

16. When having a problem, it is best to dissect the situation then act.

Dissect means

- a. Control
- b. Discuss
- c. Ignore
- d. Analyze

17. The bouncer's countenance discouraged brawls.

Countenance means

- a. Message
- b. Presence
- c. Expression
- d. Strength

18. The lecturer was able to evoke powerful emotions from her students.

Evoke means

- a. Calm down
- b. Explain
- c. Call forth
- d. Subdue

19. The wound exhibited signs of copious drainage requiring medical intervention.

Copious means

- a. Minimal
- b. Clear
- c. Maximal
- d. Foul

