



SIR ARTHUR LEWIS COMMUNITY COLLEGE ACADEMIC YEAR (2024/2025) – SEMESTER ONE END OF SEMESTER EXAMINATION

COURSE CODE : COM105
COURSE TITLE : Technical Communications Fundamental
LECTURER(S) : Mrs. Alexandra Serieux Prospere
DATE : Monday 16th December 2024
TIME : 9:00am
DURATION : 2 Hours
STUDENT ID # : _____

GENERAL INFORMATION AND INSTRUCTIONS

1. Students are reminded to read **ALL** questions and instructions in each section very carefully.
2. ANSWER **all** questions from Section A, which is worth a total of 30 marks.
3. ANSWER **the** question from Section B which is worth 20 marks.
4. **NB:** Bags, books, as well as writing paper not given by the invigilator should be deposited at the front of the examination room or as otherwise indicated.
5. **NB:** All cell phones are disallowed in the examination room.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO

SECTION A: READING COMPREHENSION (30 MARKS)

Read the following passages carefully and answer ALL the multiple choice questions that follow.

Passage 1: The Future of Sport

The best coaches will always have a knack for recognizing the sort of raw talent that separates the sporting champions from the rest. But as the twenty-first century progresses, identifying sporting superstars and helping them achieve their full potential will owe more to science and technology and less to gut instinct, hunches, and guesswork.

Many elite athletes already engage teams of specialists to help them perform at their full potential during competitions. Some will not begin a match psyche-up without a psychologist, swallow a bit of food that has not been approved by a nutritionist, or set out on a new training routine before receiving advice from a bio-mechanist armed with video and computer equipment.

Then there are exercise physiologists employed to track the metabolic changes in blood and muscles during training and competition, biomechanical engineers designing and building improved sporting equipment, and sports doctors applying treatments that speed up healing and reduce injury time.

In the near future, geneticists are likely to become involved with the sporting elite. As it is widely accepted that most sporting greats are born with an innate competitive edge, scientists are trying to trace the genes that underlie athletic ability. One of the earliest breakthroughs came in the late 1990s when researchers from Britain and the United States identified a gene known as the Angiotensin Converting Enzyme (ACE) gene which may play an important role in athletic endurance.

Experts believe parents will eventually be able to test the DNA of their children to determine whether they are likely to grow up to excel in the sporting arena. The ability to identify specific athletic pursuits to which people are best suited could follow. Later in the century, it could even become possible to genetically engineer babies with advanced sporting potential.

1. The writer's main purpose of this passage is to inform the reader about:
 - a. the influence of people in the field of sports
 - b. the role of science and technology in sports now and in the future
 - c. how athletes can achieve their goals
 - d. that great athletes are born, not made
2. Paragraph ONE (1) of the passage deals with:
 - a. the method of selecting talented sportsmen
 - b. the progress of science and technology
 - c. how to help sportsmen to attain their goals
 - d. the future of sports
3. In paragraph TWO (2), the writer mainly:
 - a. supports the use of specialist advice to sportsmen
 - b. shows the greed of athletes
 - c. outlines the importance of training
 - d. indicates how science and technology is already influencing athletes
4. Which of the following are statements of fact from the passage:
 - a. Geneticists are the best scientists.
 - b. Genes make all athletes powerful.
 - c. Exercise psychologists are employed to track metabolic changes in blood and muscles during training.
 - d. DNA testing is most definitely a good thing.

5. All of the following functions are performed by the medical practitioner EXCEPT:
 - a. monitor changes in blood and muscles
 - b. treat injuries to produce quick healing
 - c. design improved sporting equipment
 - d. prescribe special health foods for athletes
6. The writing style of this passage could best be described as
 - a. narrative
 - b. descriptive
 - c. expository
 - d. literary
7. The word nearest in meaning to **knack** in line one (1) is:
 - a. flair
 - b. guess
 - c. skill
 - d. sharpness
8. The word which can best replace **raw** in line one (1) is:
 - a. brutal
 - b. rough
 - c. untrained
 - d. uncooked
9. The expression **innate competitive edge** can be replaced by
 - a. ability to challenge
 - b. inherited advantage over other competitors
 - c. the willingness to win
 - d. ability to perform in dangerous sports
10. The expression **genetically engineer** means
 - a. to change the traits of an organism through scientific methods
 - b. to control the behaviour of engineers
 - c. to test the ability of children before birth
 - d. to perform lab tests

Passage 2: One Good Turn by Witold Rybczynski

How machine-made screws brought the world together.

A common thread. Without the wood screw, the precision screw would have been unimaginable – and the Industrial Revolution might have been postponed indefinitely.

1 Some years ago my wife and I built a house. I mean really built it – ourselves, from the ground up. Electricity being unavailable, we used hand tools. I did not have a large toolbox. It contained different – size saws, a mallet and chisels, a plane, several hammers (for friends conscripted into our work force) and, for correcting major mistakes, a heavy sledge. In addition, I had a number of tools for measuring: a tape, a square, a spirit level and a plumb line. That was all we needed.

2 One of the rewards of building something yourself is the pleasure of using tools. Hand tools are really extensions of the human body, for they have evolved over centuries – millennia – of trial and error. Power tools are more convenient, of course, but they lack precisely this sense of refinement. Using a clumsy nailing gun is work, but swinging a claw hammer is satisfying work.

3 Had a medieval carpenter come along – untutored neophyte, we could have used his help – he would have found most of my tools familiar. Indeed, even an ancient Roman carpenter would

have found few surprises in my toolbox. He would recognize my plane, a version of his *plana*; he might admire my retractable tape measure, an improvement on his bronze folding *regula*. He would be puzzled by my brace and bit, a medieval invention, but being familiar with the Egyptian bow drill, he would readily infer its purpose. No doubt he would be impressed by my hard steel nails, so much superior to his hand-forged spikes.

4 Saws, hammers (and nails), chisels, drills and squares all date from the Bronze and early Iron Ages. Many types of modern tools originated even earlier, in the Neolithic period, about 8,000 years ago. In fact, there is only one tool in my toolbox that would puzzle a Roman and a medieval carpenter: my screwdriver. They would understand the principle of screws; after all, Archimedes invented the screw in the third century B.C. Ancient screws were large wood contraptions, used for raising water. One of the earliest devices that used a screw to apply pressure was a Roman clothes press; presses were also used to make olive oil and wine. The Middle Ages applied the same principle to the printing press and to that fiendish torturing device, the thumbscrew. Yet the ordinary screw as a small fixing device was unknown.

5 Wood screws originated sometime in the 16th century. The first screwdrivers were called turnscrews, flat-bladed bits that could be attached to a carpenter's brace. The inventor of the hand held screwdriver remains unknown, but the familiar tool does not appear in carpenters' toolboxes until after 1800. There was not a great call for screwdrivers, because screws were expensive. They had to be painstakingly made by hand and were used in luxury articles like clocks. It was only after 1850 that wood screws were available in large quantities.

6 Inexpensive screws are quintessentially modern. Their mass production requires a high degree of precision and standardization. The wood screw also represents an entirely new method of attachment, more durable than nails-which can pop out if the wood dries out or expands. (This makes screws particularly useful in shipbuilding.) The tapered, gimlet-pointed woodscrew - like its cousin the bolt - squeezes the two joined pieces together. The more you tighten the screw-or the nut-the greater the squeeze. In modern steel buildings, for example, high tension bolts are tightened so hard that it is the friction between the two pieces of steel-not the bolt itself-that gives strength to the joint. On a more mundane level, screws enable a vast array of convenient attachments in the home: door hinges, drawer pulls, shelf hangers, towel bars. Perhaps that is why if you rummage around most people's kitchen drawers you will most likely find at least one screwdriver.

7 Wood screws are stronger and more durable than nails, pegs, or staples. But the aristocrat of screws is the precision screw. This was first made roughly - by hand - and later on screw-cutting lathes, which is a chicken-and-egg story, since it was the screw that made machine lathes possible. The machined screw represented a technological breakthrough of epic proportions. Screws enabled the minute adjustment of a variety of precision instruments like clocks, microscopes, telescopes, sextants, theodolites, and marine chronometers.

8 It is not an exaggeration to say that accurately threaded screws changed the world. Without screws, entire fields of science would have languished, navigation would have remained primitive and naval warfare as well as routine maritime commerce in the 18th and 19th centuries would not have been possible. Without screws there would have been no machine tools, hence no industrial products and no Industrial Revolution. Think of that the next time you pick up a screwdriver to pry open a can of paint.

Circle the best answer for each of the following questions.

11. The author begins the passage with a personal experience of building a house. What was his purpose?
- a. To show that the quality of old-fashioned hand tools was superior to the quality of precision tools.
 - b. To show that using simple hand tools often gives more satisfaction in building than sophisticated power tools.
 - c. To show that although it is possible to build a house without precision tools, it is best to have them handy.
12. In the third paragraph, the main idea is that
- a. the tools used today have no similarity to the tools used by an ancient Roman carpenter.
 - b. since medieval carpenters were untutored, they would be puzzled by the tools we use today.
 - c. although there are many new tools and they have improved in quality, the principle of use has not changed in centuries.
13. The author states that ancient Roman carpenter would understand the use of all his tools with the exception of the
- a. retractable tape measure.
 - b. brace and bit.
 - c. screwdriver.
14. Wood screws originated sometime in the century, but they were not widely available until after .
- a. twentieth; 1910
 - b. sixteenth; 1850
 - c. nineteenth; 1800
15. Why were early screws so expensive?
- a. They had to be painstakingly made by hand.
 - b. They were made from a scarce metal.
 - c. They were seldom used by most carpenters.
16. Who invented the hand-held screwdriver?
- a. an ancient Roman
 - b. Archimedes
 - c. an unknown person
17. Although the author does not give an exact date for the invention of the screwdriver, which of the following would be the most probable?
- a. during the eighteenth century
 - b. during the nineteenth century
 - c. during the twentieth century

18. Why was it so long after the invention of the screw, that the screwdriver became widely used?
- a. Screws were of such poor quality.
 - b. Screws were so expensive.
 - c. Screws had so few uses.
19. Why would you likely find a screwdriver in the kitchen of most modern-day homes?
- a. A screwdriver is used to repair so many appliances and attachments in the home.
 - b. A screwdriver is so easily misplaced; the kitchen is a common storing place.
 - c. A screwdriver is seldom used in other places in the home.
20. What is the most technologically advanced screw?
- a. the wood screw
 - b. the turn screw
 - c. the precision screw

For questions 21 to 30, please select the best definition for each of the following words and phrases as used in Passage 2.

21. evolved

- a. evoked
- b. multiplied
- c. developed

22. retractable tape measure

- a. tape measure that can draw back
- b. tape measure that is reliable
- c. tape measure that is dispensable

23. hand-forged

- a. handpicked
- b. hand-to-hand
- c. handmade

24. contraptions

- a. conveniences
- b. gadgets
- c. spikes

25. precision

- a. pride
- b. accuracy
- c. planning

26. standardization

- a. uniformity
- b. adjustments
- c. skill

27. attachment

- a. construction
- b. adjustment
- c. fastening

28. gimlet-pointed

- a. pointed and smooth
- b. pointed and sharp
- c. pointed and spiraled

29. friction

- a. connecting point
- b. resistance to motion
- c. forward motion

30. aristocrat of screws

- a. screws made in America
- b. screws of the highest quality
- c. screws made by machines
- d. been accelerated

SECTION B: TECHNICAL DESCRIPTION (20 MARKS)

Process explanation

Write a process explanation essay on the following technical procedures

Choose ONE the following topics and write a detailed process essay of 250 to 300 words, on the topic of your choice. Remember to organise your essay into the following parts:

- introduction (with a thesis)
- body paragraphs
- conclusion

TOPICS

1. How to replace a condenser fan or compressor pump on a refrigerator
2. How to change the brakes on a car.
3. How to create a parallel or series circuit board
4. How to change an intermediate switch
5. How to service an AC Window unit
6. How to remove air from a refrigerator cooling system, without a vacuum.
7. How to connect a wall switch with three lights
8. How to mount a wall lamp
9. How to service a Diesel engine
10. How to do an oil change for a truck

