PART 1: READING COMPREHENSION **(15 Marks)**

Read the two texts below and answer the questions that follow:

TEXT A: Mechanical Engineering

Mechanical engineering is one of the most rapidly growing industries in the world today. It has also become one of the most widely studied and widely available college courses, with millions of students world wide choosing to study it upon leaving high school. However, many mechanical engineering students drop out of college before the end of their first year. The reason? They don't really know what mechanical engineering is when they apply to study it.

Mechanical engineering is one of the most crucial industries if we are to continue living in the fashion in which we live. When the mechanical age entered full swing, thousands of workers were forced out of work in favour of machines which were quicker at their jobs and didn't bother managers with ***pesky*** requests for a lunch break. For some time, those who once earned a living in the factories were unemployed and ***destitute***; but then one day, a machine broke down. It was soon realised that each organisation with mechanical workers would suffer financially if the powerful machines had to take sick days; and so, work was created. Former factory workers were retrained as mechanical engineers and put to work repairing the machines which took their jobs and forced them into poverty. It was not long before a guy could make a very healthy living as a mechanical engineer - especially if he was smart enough to not repair each machine 100%.

As a subject, mechanical engineering is concerned with the workings of mechanical objects and teaches students thousands of valuable lessons when it comes to entering the field. A mechanical engineering course, however, is not simply learning how things work. It covers a wide range of subjects, including mathematics. Many students find themselves once again face to face with calculus, their old enemy from high school and decide that the course is not for them. Despite this, mechanical engineering courses continue to produce millions of graduates each year. Those who have graduated from mechanical engineering courses have gone on to work on a variety of projects ranging from design to destruction. Many have even developed their own ideas into fully functioning mechanical objects and become millionaires in the process.

Mechanical engineering is the fastest growing industry in the modern world. It is also safe for one to assume that it is going to continue to produce work; until machines are employed to fix other machines.

A: UNDERSTANDING TEXT A (all answers <u>according to the text</u>)

1. What is the main purpose of this text?
   a. to annoy b. to entertain c. to persuade d. to inform
2. When do a lot of students decide not to carry on studying mechanical engineering?
   a. during the 1st year b. at the end of the 1st year
   c. in the 1st semester d. when they leave high school
3. Why do a lot of students decide not to carry on studying mechanical engineering?
   a. they found it to be rather boring b. too much mathematics
   c. ignorance of the subject matter d. they were forced into poverty
4. The writer implies that, in the foreseeable future, mechanical engineering will …
   a. produce many millionaires b. provide employment
   c. encourage many to study the subject d. mean doing less calculus

5. Mechanical engineers are fashionable people. TRUE FALSE

6. A clever mechanical engineer will not repair machines fully. TRUE FALSE

7. 'pesky' means:

   a. annoying b. lively c. lazy d. enjoyable

8. 'destitute' means:

   a. rich b. immoral c. penniless d. busy

TEXT B: Overall traits of engineers

Engineers are more than middle-aged men who, when talking to non engineers about a particular device, will use the entire 8 character alpha-numerical code that ***their*** company uses to designate the device. As part of an overall definition, I suggest that engineers understand how to use techniques of engineering analysis to design (i. e. synthesize) working devices and processes even though they have an imperfect understanding of important physical, chemical or biological issues. Vincent (1990) gives several examples from aeronautical engineering where ***his*** view is that engineering is a battle against uncertainty. This imperfect understanding can be caused by too little time and or money to attain it, or because it is not attainable given the current level of pure and applied science. Furthermore engineers operate under constraints caused by a need to produce a product or service ***that*** is timely, competitive, reliable, and consistent with the philosophy and within the financial means of their company. Engineers are result driven and the detail of an engineering solution for a needed product, process or service is always determined by balancing competing effects to attain an answer that is optimal subject to the imposed constraints. These ideas lead to an example that I often work into my under-graduate classes. A mathematician is expected to produce the "correct" answer, which for a real problem means a number. A scientist will test nature and produce a number and its expected accuracy. An engineer needs to get the number (by any available means), its reliability or accuracy and then is expected to provide an opinion or judgment that will enable a device or process to be constructed.

B: UNDERSTANDING TEXT B (all answers <u>according to the text</u>)

9. According to the writer, the common perception of engineers is that they …

   a. talk to non-engineers b. are men over 40 c. have too little money d. study philosophy

10. According to the writer, what three things do engineers not fully understand?

    (i) _____ (ii) _____ (iii) _____

Find a word or phrase in the text that means

11. work in a restricted environment

12. a field concerned with the development of aircraft

*To what do the following highlighted words **refer**?*

13. ***their*** (line 2) =

14. ***his***(line 6)

15. ***that*** (line 10) =

PART 2: PARAGRAPH STRUCTURE **(10 Marks)**

A: Look at the paragraph below and answer the questions that follow:

Self-driving cars would have transformative and broad ranging effects, both good and bad. First of all, the burden of vehicle crashes could be largely avoided, making small, fuel-efficient vehicles desirable and reducing insurance costs. Congestion could be reduced, both from fewer incidents and more efficient driving, which would mean less investment in road-building and expansion. Urban form could change, with many people opting to use shared vehicles rather than owning a vehicle. Elderly and physically handicapped people could have new mobility opportunities, which is particularly important as our elderly population increases. On the other hand, whole categories of jobs might be eliminated, such as taxi and transit drivers. Vehicle travel and congestion could actually increase as empty cars shuttle themselves around, urban form becomes even more sprawling, and drivers elect to travel more.

16. What kind of paragraph is this: (i) Process; (ii) Reason; (iii) Contrast (point-by-point); (iv) Contrast (side-by-side); or (v) Descriptive?

    Answer: _____

17. List THREE of what the writer identifies as the main-point **good** things and TWO of what the writer identifies as main-point **bad** things about self-driving cars: (**2½ Marks**)

GOOD	**BAD**
1	1
2	2
3	

18. What is the TOPIC of this paragraph? _____

19. What is the CONTROLLING IDEA of this paragraph? _____

    _____

20. What TWO TRANSITIONS are used in this paragraph? (**2 Marks**)

    (i) _____

    (ii) _____

21. Write a suitable CONCLUDING SENTENCE for this paragraph: (**2½ Marks**)

    _____

    _____

    _____

PART 3: PARAGRAPH WRITING **(15 Marks)**

Choose any ONE of the following paragraph types and any ONE of their associated topics and write a PARAGRAPH. Make sure to have a strong TOPIC SENTENCE with CONTROLLING IDEA, MAIN SUPPORT and DETAIL sentences, and a CONCLUDING SENTENCE:

TYPE 1: PROCESS

22. How to annoy your younger/older sister/brother
23. How to tell your parents you have failed a course

TYPE 2: DESCRIPTIVE

24. Describe the one thing you most desire
25. Describe the person who has influenced you the most

TYPE 3: REASON

26. Why is it important to be team-player?
27. Why are you studying engineering at UoB?

TYPE 4: CONTRAST

28. What is the difference between a person with a university degree and one without one?
29. What is the difference between your generation and that of your grandparents?