(B) Choose the correct answers. (1x10 = 10 marks)

1. The wheel cylinder forces the brake pads against the _____ disc.
   a- reciprocating b- evolving c- revolving
2. Machines are ..... mechanical engineers.
   a- the concern of b- concerned of c- concerned for
3. Polyester resin .....is used for castings, such as boat and body cars, is a thermosettin plastic.
   a- who b- where c- which
4. ***Laser*** is an _____ formed by the initial letters of **L**ight **A**mplification by **S**timulate **E**mission of **R**adiation.
   a. antonym b. acronym c. idiom
5. Safety gloves provide protection for hands. For example, they reduce the danger of cuts ....., they prevent burns.
   a- In addition b- For instance c- Because
6. Sultan wanted to become an officer in the navy, but the commission did not accept him ..... his poor eyesight.
   a- so that b- because c- because of
7. Aeronautical engineering _____ with flight mechanisms.
   a- is dealt b- deal c- deals
8. A condenser is an apparatus which ..... change a gas to a liquid.
   a- use to b- used to c- is used to
9. If something 'oscillates', it actually _____.
   a. swings backwards and forwards b. goes up and down
   c. moves down a straight line.
10. Copper is highly ..... . So it is used for electric wiring.
    a. productive b. conductive c. conducive

1	2	3	4	5	6	7	8	9	10	Total
										/10

جامعة الملك سعود
King Saud University

Say whether these statements are TRUE or FALSE. (1 x 5 = 5 marks)

1. Water and air protect aluminum from corrosion. .....
2. Corrosion starts at the outer side of a material. .....
3. Impurities restrain corrosion. .....
4. The word **thorough** in the passage means **'full.'** .....
5. Rust only changes the appearance of the metal. .....

Write your answers here.

1	2	3	4	5	Total
					/5

Section II
Integrated kills

II A. Match the words in the box with their meanings. (1x6=6 marks)

1	buoyancy	a. portable items of personal property
2	equilibrium	b. property of a liquid that resists its flowing
3	viscosity	c. tendency of a body to float
4	slot	d. to do what one is asked to do
5	comply	e. state of balance in opposing forces
6	gear	f. a narrow opening

Write your answers here.

1	2	3	4	5	6

Writing

Section III (A): *Assuming the role of a safety manager, write down safety rul unsafe conditions.(you have to use the word in the parenthesis in your (1x4=4 marks)*

1- inadequately ventilated labs (**should**)

.....

2- inexperienced employees working without supervision (**never**)

.....

3- wearing a tie while working on moving parts of a machine (**must no**

.....

4- wearing goggles while working on grinders. (**always**)

.....

Section III (B): *Rewrite following sentences replacing the words in italics verbs. (1x5=5 marks)*

1. Corrosion ***makes*** structures ***weak***

.....

2. Carbon fibre frames ***make*** racing bicycles **lighter** and ***strong***

.....

3. Tensile forces would ***make*** a beam ***longer***

.....

4. A reamer is a tool used to **make** a hole ***larger***

.....

5. Oil can be used to ***make*** tight bolts ***loose***

.....

Section I
Reading

Read the following text very carefully.

A major consideration in engineering design is maintenance. One of the commor causes of the failure in the long term is corrosion. This is any deterioration in component's appearance or physical properties.

Corrosion covers a number of processes whereby a metal changes state as a resu some interaction with its environment. It often occurs where water, either as a li or vapour in air of high humidity, is present.

In general, corrosion becomes worse when impurities are present in conditions. It never starts inside a material, and there will always be su evidence that corrosion exists, although **thorough** examination may be needed.

A common example of corrosion is the rusting of steel where a conversion metallic iron to a mixture of oxides and other compounds occurs. This no changes the appearance of the metal but also results in a decrease in its cross-s

It is imperative that a design takes into account whether a material will be affe a particular environment and, if corrosion is likely, at what rate?

Many factors can intervene in a way to restrain its progress. An exa aluminum and its alloys which perform satisfactorily in many engineer domestic conditions when exposed to air and water. This is due to t production of a tough adherent film of oxide which protects the metal fror attack so that corrosion halts.