Faculty of Engineering **Mechanical 1st year Makeup**
Subject: English **year: 2012/2013**
Time: 2 hour

A- Answer the following questions :

1) What is mechanical engineering concerned with?
2) What are the steps of designing a machine?
3) Why does the field of bioengineering needs engineers?
4) What is the importance of carnot cycle to mechanical engineering?
5) What is meant by: thermodynamics – aeronautics – reciprocating engine – automotive engineering?

B- Fill in the blanks with the proper terms from the list:-

(Atomic fission – Atomic particle – Blades – Boiler – Generated – Rods – Uranium – Velocity – Reactor - Nuclear chain reaction).

1) In a nuclear power plant water is heated in a …….. to produce steam.
2) The ……. Of the steam produced drives a turbine motor.
3) The steam acting upon the…….. of the turbine causes them to turn.
4) Electricity is……. by means of a dynamo.
5) In a nuclear power plant…….. is the fuel used.
6) The process of splitting the uranium atom into two nearly equal parts is known as……..
7) The actual splitting of the atoms takes place inside the……
8) The …… which contain the uranium fuel are surrounded by neutron absorbing material.
9) A neutron is another word for an …….
10) The splitting of an atom, followed by the release of neutrons which in their turn split more atoms, is known as a…….

(II) Grammar and Structure:

Complete the sentence with prepositions: (Out– Off – Up – In – With)

1) Can you pass me that spanner? I need to tighten……. this bolt.
2) Did you remember to top…… the lubricating fluid after we repaired the leak?
3) We've run…… of raw material.
4) One of our workers didn't turn…… yesterday.
5) This workshop is very dirty. Clean it……. immediately.
6) Don't forget to switch……. the power before you remove the safety guard.
7) I hope the motor doesn't cut…… again.
8) If you don't lubricate the mechanism regularly, it might seize……
9) I think we need to call……. an electrician.
10) What's wrong ……. my computer?

III: Reading comprehension

Read the following passage and then answer the questions:

Solar power is technology that uses energy from the sun. The sun's heat and light can be turned into electricity. Scientists are now working on ways to use solar power instead of petrol for vehicles. Solar-powered vehicles have batteries which are charged by the sun's rays. Unfortunately, the batteries run out very quickly and it takes a long time to charge them again. Some British students who were studying science in Oxford decided to build a solar-powered bicycle and enter an international race. They had to raise money for the project and train for the race. **Local** companies helped by giving them money and equipment. The race was in a place where the land is flat and the sun shines strongly. The riders had to do 7 laps of the course. Then they had a two-hour break to recharge their batteries. Finally, they had to do 5 more laps. Each lap was 4 km long. The team finished second and they were very pleased with the result.

A) Answer the following questions:

1. Where does the solar energy come from?
2. What disadvantages do solar-powered vehicles have?
3. How could the students raise money for their project?

B) Choose the correct answer from a, b, c or d:

4. How long was the race?

a) 52 km. b) 48 km. c) 12 km. d) 4 km.

5. The underlined word "**Local**" means something which……..

a) has money b) involves many countries

c) relates to a particular place d) makes technology

IV- Writing a paragraph

Write a paragraph on only ONE of the following topics:-

1. Mechanical Engineering.
2. Nuclear power plants.
3. Solar Energy.

Good Luck

Model Answer:

A- Answer the following questions :

1) Mechanical engineering became important as people tried to develop and design machines that would produce goods.
   Mechanical engineers design and develop machines that are capable of producing various motions, and they develop tools for building these machines.
2) First, we need to know the purpose of a particular machine, such as a crane or an engine. Then if we know the loads the machine will carry and the motions it will produce, we can make the most efficient use of the materials we have.
3) to design and develop equipment for use in medical treatment.
4) Mechanical engineers apply Carnot's principles to all machines that use thermal energy conversion.
5) Thermodynamics: the branch of physics that deals with the transformation of heat into other forms of energy.
   Aeronautics: the branch of engineering having to do with the design and operation of aircraft. The principles of aeronautics determine the design of an airplane.
   Reciprocating engine: an engine that produces power by the motion of one or more pistons inside cylinders.
   Automotive engineering: the design and production of automobiles automotive engineering involves the use of the internal combustion engine for movemnt.

B- Fill in the blanks with the proper terms from the list:-

1) Boiler.
2) Velocity.
3) Blades.
4) Generated.
5) Uranium.
6) Atomic Fission.
7) Reactor.
8) Rods.
9) Atomic particle.
10) Nuclear chain reaction.

(II) Grammar and Structure:

Complete the sentence with prepositions: (Out– Off – Up – In – With)

1) Up.
2) Up.
3) Out.
4) Up.
5) Up.
6) Off.
7) Out.
8) Up.
9) In.
10) With.

Ill- Reading Comprehension

Answer the following questions:-

1. From the sun.
2. Solar-powered vehicles have batteries which are charged by the sun's rays. Unfortunately, the batteries run out very quickly and it takes a long time to charge them again.
3. Local companies helped by giving them money and equipment.

B) Choose the correct answer from a, b, c or d:

4. b) 48 km.
5. c) relates to a particular place.

IV- Writing a paragraph

Writing is assessed by the examiner.