**Electrical Engineering**

**I-Text book:-**

**Answer the following questions:-**

1-What are the mechanisms involved in the operation of the nervous system?
2-What is the function of electrical charges in living systems?
3-What is the definition of "Atomic fission"?
4-What is meant by the expression "Nuclear chain reaction"?
5-The centre of a uranium atom is known as……………
6-I was afraid that the floor would not bear such an unaccustomed weight.
"Unaccustomed" means…………………………

**II-Structure and Grammar:-**

**Do as shown in brackets:**

1-Somebody accused me of stealing money.  
(Change into Passive)
2-It is a very long time since he wrote to me.  
(He………)
3-You should pay your depts before leaving.  
(Your depts………..)
4-Right now Jack is in hospital. He(treat) for a burn in his arm.  
(Correct the verb)
5-Were he honest, he (return) the money.  
(Correct the verb)

**Choose the correct answer:**

6-Ann knows a lot about many things. She is a well (informed /known /balanced /kept) woman.
7-Give my best wishes to your parents. I hope they are (well /good /best /bad).
8-She likes wearing (colorful /colorfully /colors /color) clothes.
9-He was very ill. He had to take the medicine (but /incase /so that /even if) he didn't like it.
10-All novels (were written /written /which wrote /would be written) by Naguib Mahfouz are available at bookstores.
Have you ever noticed the way dust clings to the surface of a long-playing gramophone record? You wipe the dust off with a cloth and place the record on the turntable and immediately the surface is covered with dust once more. The only way to prevent this is to use an anti-static cloth, because it is static electricity that is causing the dust to stick to the record. When Chester Carlson set out to invent a dry copier in the 1930s, he realized that static electricity had certain unique properties. In those days the only way of reproducing a document was by photography or by printing, both of which are wet processing systems. Carlson felt sure there must be a better way and eventually, in 1937 he succeeded in inventing an entirely new dry copying system, using static electricity.

Inside a photocopier there is a drum or plate with a coating of material which can be charged with static electricity. But when the material is exposed to light, the static charge drains away. Materials which have this property are called photoconductive. The document to be copied is placed over the electro statically charged drum and a bright light is shone onto it. The charge drains away from the blank, portions of the document, but remains on the areas covered by lettering, diagrams or sketches. Very fine powder is then sprinkled over the surface and this sticks to the image that is going to be reproduced. Then a sheet of ordinary copying paper is electro statically charged and fed over the image. The powder is attracted to copying paper in the form of the original pattern. The sheet of paper passes through heated rollers and the image is permanently fused onto it.

A- Answer the following questions:
1- How were documents copied before 1937?
2- What is the purpose of an anti-static cloth?

(B) Study this list of words and expressions and choose the most suitable to fill the gaps in the sentences below:
- anti static. - dry copying system. - exposed. - properties. - wet processing.
1- You should clean LP records with an…………….. cloth.
2- Chester Carlson was determined to invent a……………….
3- Static electricity has certain unique………………..  

(IV)Writing:
Rewrite the following passage using one subject form:

You realize the importance of wire when I think about its many uses. Many miles of wire were used in the construction of one large aircraft. The light we use in the reading, I use the heat in making the coffee, and the spring which is used to make your watch run, depend on the existence of wire. In the industrial nations, we use the power depending on wire of different types and sizes. Our whole communication system requires it somewhere. We could not operate our transportation system without it. The proper function of many parts of cars and machines is made on the principle of the use of wires and wiring. And you know that your own safety depends on correct wiring.
Model Answer

Electrical engineering

I. Text book

A. Answer the following questions:

1- The operation of the entire nervous system involves two principal mechanisms. One is the transmission of the nerve impulse along the nerve fibre. The second is the excitation of one nerve cell by another across their synaptic connection.

2- They regulate the passage of chemicals through the surface of the cells. The nerve impulse is the messenger, whereby the brain, spinal cord and other parts of the nervous apparatus in the animal body carry on their communicative functions. In addition, the activity of these electrical charges controls the physical state of living material.

3- An atomic particle called a neutron strikes the centre, or nucleus, of a uranium atom, splitting it into two nearly equal parts. This process is known as atomic fission.

4- Fission causes the release of a large amount of heat energy and more neutrons. These neutrons split more uranium and thus more energy and more neutrons. These neutrons split more uranium and thus more energy and more neutrons are released. The result is known as a nuclear chain reaction.

5- nucleus.

6- Unusual.

II. Grammar and Vocabulary

Do as shown in brackets:

1- I was accused of stealing money.
2- He hasn't written to me for along time.
3- Your depts should be paid before leaving.
4- is being treated
5- would return

Choose the correct answer:

6- informed
7- well
8- colorful
9- even if
10-written
III. Reading comprehension
Answer the following questions:-

(A) 1- They were copied either by photography or by printing.
    2- To prevent the record from dust.
(B) 1- anti- static.
    2- dry copying system.
    3- properties.

IV- Writing a paragraph

Writing is assessed by the examiner.