BOILOGY PORTION

TIME ALLOWED: 45 MINUTES   **MARKS: 25**

Note: Attempt all questions.

Q.1 **Write short answers of the following questions.**   **(1x15=15)**

    i.   **Differentiate between diffusion and Osmosis.**

    ii.   **What is translocation?**

    iii.   **How waste materials are removed by cockroach?**

    iv.   **Differentiate between nephron and neuron.**

    v.   **How you define antagonistic muscle?**

    vi.   **There are how many types of joints, only name them?**

    vii.   **Where Parathyroid glands located? What is its function?**

    viii.   **What is the role of auxins in plants?**

    ix.   **What is the difference between Parthenocarpy and Parthenogenesis?**

    x.   **What is metamorphosis?**

    xi.   **What is nucleotide? Only name different nitrogenous bases.**

    xii.   **Differentiate between transcription and translation.**

    xiii.   **What is the function of restriction enzymes?**

    xiv.   **Differentiate between variation and mutation.**

    xv.   **What is a transgenic organism?**

Q.2 **Describe the structure of inner ear of human.**   **(05)**

Q.3 **Define Mendel Law of segregation? Briefly explain with suitable example.**   **(05)**

ENGLISH PORTION

TIME ALLOWED: 45 MINUTES   **MARKS: 25**

Note: Attempt all questions.

Q.1 Translate the following into Urdu.   **(03)**

    i.   Ignorance ruled everywhere and in every sphere of life.

    ii.   Travelling has become very fast and comfortable.

    iii.   This tradition began centuries ago and it is still progressing day by day.

Q.2 Define the following terms with examples.   **(03)**

    i.   Pronoun

    ii.   Adjective

    iii.   Verbosity

Q.3 Use the following in your sentences.   **(03)**

    i.   Glory

    ii.   Efficiency

    iii.   Defect.

Q.4 Change the following active sentences into passive sentences.   **(03)**

    i.   The peon rings the bell.

    ii.   She has finished her work.

    iii.   They invited me to a party.

Q.5 Change the narrations.   **(03)**

    i.   He says to me, "I am working hard these days".

    ii.   Mother said to her son, "May you live long".

    iii.   I said to Anwer, "Where do you live in Karachi".

Q.6 Translate into English.   **(05)**

    i.   اگر محنت کرو گے تو کامیاب ہو جاؤ گے۔

    ii.   تالی ایک ہاتھ سے نہیں بجتی۔

    iii.   صبح سے زور دار بارش ہو رہی ہے۔

    iv.   ڈاکٹر کے آنے سے پہلے مریض صحت یاب ہو چکا ہے۔

    v.   علم حاصل کرو خواہ تمہیں اس کیلئے چین ہی جانا پڑے۔

Q.7 Write an essay of not less than 15 lines on any one of the following.   **(05)**

    i.   Money is Every Thing

    ii.   My Hobby

CHEMISTRY PORTION

TIME ALLOWED: 45 MINUTES   MARKS: 25

Note: Attempt all questions.

Q.1   Give the short answers of the following.   (1x15=15)

   i.   Define equilibrium. Also give its types with example.

   ii.   Write the balanced chemical equation and equilibrium constant expression of the
            following reactants.

       a)   NaCl and $AgNO_3$

       b)   NaOH and H_2SO_4

   iii.   Write any two characteristics of bases.

   iv.   Define Lewis concept of acid and base.

   v.   Define the following terms with examples.

       a)   Catenation

       b)   Homologous series

   vi   How natural gas form? Also give its composition.

   vii.   Define functional group. Give the formula and example of functional
            group carboxylic acid.

   viii.   What are the unsaturated hydrocarbons? Give example.

   ix.   Give the reaction of reduction alkyl halide.

   x.   What is formed by the dehalogenation of tetra halides? Give reaction also.

   xi.   Give the source of the organic compounds:

       a)   Glucos

       b)   Fructose

   xii.   Write a short note on Mesosphere.

   xiii.   How can you remove the permanent hardness of water?

   xiv.   What is the origin of the petroleum?

   xv.   What is fractional distillation?

Q.2   Define and explain the "law of Mass action"   (05)

Q.3   What are the fatty acids? Also explain the source and uses of lipids.   (05)

PHYSICS PORTION

TIME ALLOWED: 45 MINUTES   **MARKS: 25**

Note: Attempt all questions.

Q.1   Write short answers of the following.   **(15)**

   i.   What is shunt resistance? What is its purpose?

   ii.   How can the cost of electricity consumed in a house be calculated?

   iii.   On what factors the magnitude of induced e.m.f depends upon.

   iv.   What is a transformer and its principle?

   V.   What is the function of carbon brushes in d.c motor?

   vi.   State the rule by which the direction of force on a current caring conductor can be determined?

   vii.   What is the functions of split rings in d.c motors?

   viii.   Nucleus of an atom is positive, then how a negative charge in the form of a β particle comes out of the nucleus?

   ix.   Give two uses of radio isotopes?

   x.   Which type of radiations are emitted in the process of radio activity?

   xi.   How a diod is forward biased? What is its resistance in this state?

   xii.   Write down the output equation and truth table of NAND gate?

   xiii.   What is protocol?

   xiv.   What are point charges?

   xv.   What is meant by data managing? How it is important for us.

Q.2   What is an A.C generator? Explain its construction and working.   **(05)**

Q.3   Describe the properties of α,β and γ radiations?   **(05)**