Important instructions:

- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

Write short notes on:

1. a) What is an epidermal-melanin unit?
   b) Enumerate the non keratinocyte cells of epidermis.
   c) Structure of keratinocytes under the following headings:
      i. Light microscopic appearance
      ii. Electron microscopic appearance
   d) Special stains to study melanocytes.

2. a) Characteristics of X-linked recessive inheritance.
   b) What is genetic mosaicism?
   c) Antenatal diagnostic tests available for genodermatoses.
   d) Importance of gene therapy in genodermatoses.

3. a) Structure of a hemidesmosome.
   b) Enumerate the important antigenic components of a hemidesmosome.
   c) Enumerate the functions of the hemidesmosomes.
   d) Role of hemidesmosomes in various blistering diseases of skin.

4. a) Structure of eccrine sweat glands.
   b) Formation of sweat.
   c) Tabulate the anatomical and physiological differences between eccrine and apocrine sweat gland.

5. Pathogenesis of psoriasis under the following headings:
   a) PSORS 1-8 genes.
   b) Role of T cells
   c) Role of dendritic cells
   d) Role of signaling molecules
   e) Role of keratinocytes

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DERMATOLOGY, VENEROLOGY & LEPROSY

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6. a) Differences between a longitudinal and cross-sectional study, giving examples.
   b) How do you calculate the sample size of a therapeutic trial?
   c) What is meant by strength of evidence and quality of evidence in a clinical trial?

7. a) Enumerate the resident flora of skin.
   b) Role of resident flora of the skin in health
   c) When do resident organisms become pathogenic?
   d) Erythrasma.

8. a) Enumerate the components of terrestrial solar spectrum.
   b) Natural factors which protect us from the deleterious effects of solar radiation.
   c) Tabulate the natural effects of the different bands of the solar spectrum on skin.
   d) Importance of lifestyle changes in photoprotection.
   e) Write a prescription for a patient with mild photosensitivity.

9. In a laboratory test, explain with examples, the importance of:
   a) Sampling technique
   b) Transport medium
   c) Sensitivity
   d) Specificity
   e) Positive predictive value

10. Functions of the skin under the following headings:
    a) Permeability
    b) Barrier function
    c) Thermoregulation
    d) Immunological
    e) Sensations

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POSSESSION / USE OF CELL PHONES OR ANY SUCH ELECTRONIC GADGETS IS NOT PERMITTED INSIDE THE EXAMINATION HALL.