

**Preliminary Examinations
for Diploma in Diabetes Care Technology : DDCT Course**

**Paper – I
Basic Science**

Time : 3 Hours

Full Marks : 80

*Question 1 is Compulsory.
Answer any Two from Question No. 2 to 5 and any Four from Question No. 6*

Q-1) Multiple Choice – Answer All.

(For each question there will be one correct answer.)

10x1 = 10

i) Shortest acting Insulin:

- | | |
|-------------|------------|
| a) Glargine | c) NPH |
| b) Lispro | d) Regular |

ii) Insulin is usually not be given as:

- | | |
|---------|---------|
| a) i.v. | c) i.m. |
| b) s.c. | d) oral |

iii) Functions of glucagons are all, except

- | | |
|---------------------------------|-------------------------------|
| a) Glycogenolysis | c) Inhibits insulin secretion |
| b) Stimulates insulin secretion | d) Promotes ketogenesis |

iv) Glucagon is secreted from which cell of the pancreas?

- | | |
|---------------|---------------|
| a) Alpha cell | c) Delta cell |
| b) Beta cell | d) Duct cell |

v) Which is the Long Acting Insulin?

- | | |
|--------------|-----------|
| a) Glargine | c) Lispro |
| b) Glulisine | d) Aspart |

vi) Actions of insulin are all, except:

- | | |
|-----------------------|----------------------------|
| a) Gluconeogenesis | c) Protein synthesis |
| b) Glycogen synthesis | d) Prevention of lipolysis |

vii) Insulin causes all, except:

- | | |
|-------------------|------------------|
| a) Lipotrophy | c) Hypoglycemia |
| b) Lipohypertrohy | d) Hyperglycemia |

viii) Biguanide is:

- | | |
|----------------|-----------------|
| a) Glimeperide | c) Metformin |
| b) Glipizide | d) Vildagliptin |

ix) Gluconeogenesis occurs in all, except:

- | | |
|----------|-----------|
| a) Bone | c) Brain |
| b) Liver | d) Kidney |

x) Functional unit of kidney is known as

- | | |
|---------------|--------------|
| a) Axon | c) Nephron |
| b) Hepatocyte | d) Beta cell |

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**Paper – I
Basic Science**

Answer any Two from Question No. 2 to 5 and any Four from Question No. 6

2x20 = 40

Q2. Draw a structure of heart and its chambers. Describe circulation schematically.

10+10 = 20

Q3. Draw the structure of islets of pancreas. Enumerate the functions of islet cells.

10+10 = 20

Q4. Name the different insulin preparations. What are the different insulin delivery system and write in detail about self insulin injection procedure.

10+5+5 = 20

Q5. Describe the arches of the foot & clinical importance. Name the bones of foot. Name the different parts of foot wear.

10+5+5 = 20

Q6. Write short notes on (**Any Four**) of the following:-

4 x 7.5 = 30

- a) Draw a diagram of nephron and describe its function.
- b) Draw a structure of a neuron and describe its function.
- c) Describe Benedict test and Rotheras test.
- d) Describe glycolysis.
- e) Describe different phases of cardiac cycle.

**Preliminary Examinations
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**Paper – II
Other than Basic Science [Clinical Diabetology]**

Time – 3 hours

Full Marks – 80

*Question 1 is Compulsory.
Answer any Two from Question No. 2 to 5 and any Four from Question No. 6*

Q-1) Multiple Choice – Answer All.

(For each question there will be one correct answer.)

10x1 = 10

- i) All are peakless insulin, except:
- | | |
|-------------------|-------------|
| a) Glargine | c) Degludec |
| b) Egular Insulin | d) Detemir |
- ii) Coagulants used in vials for testing plasma glucose is:
- | | |
|------------|-------------|
| a) EDTA | c) Fluoride |
| b) Citrate | d) Chloride |
- iii) All are microvascular complications of diabetes, except:
- | | |
|----------------|----------------------------|
| a) Retinopathy | c) Neuropathy |
| b) Nephropathy | d) Coronary artery disease |
- iv) Commonest cranial nerve involved in diabetic neuropathy:
- | | |
|---------------|-------------|
| a) Oculomotor | c) Abducens |
| b) Trochlear | d) Facial |
- v) Which of the following is not a recommended test for Diabetes Mellitus?
- | | |
|---------------------------|----------------|
| a) Fasting plasma glucose | c) Urine sugar |
| b) Random plasma glucose | d) OGTT |
- vi) All are seen in DKA, except:
- | | |
|------------------|------------------------------|
| a) Normoglycemia | c) Dehydration |
| b) Tachycardia | d) Abdominal pain/tenderness |
- vii) Drug most useful in management of DKA is:
- | | |
|------------------|--------------|
| a) Glimepride | c) Insulin |
| b) Glibenclamide | d) Metformin |
- viii) HbA1C level in blood measures:
- Acute rise of plasma glucose
 - Plasma glucose level of 2-3 months
 - Plasma glucose level of 1-2 weeks
 - Haemoglobin level
- ix) The cardinal symptoms of diabetes are all, except:
- | | |
|---------------|----------------|
| a) Polyuria | c) Weight loss |
| b) Polydipsia | d) Myalgia |
- x) For testing fasting plasma glucose patient should fast atleast for:
- | | |
|-------------|-------------|
| a) 12 hours | c) 10 hours |
| b) 8 hours | d) 24 hours |

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**Paper – II
Other than Basic Science [Clinical Diabetology]**

Answer any Two from Question No. 2 to 5 and any Four from Question No. 6

2x20 = 40

Q2. Describe the advantage & disadvantage of Glucometer use. Briefly describe CGMS & its clinical use.

10+10 = 20

Q3. What are the different types of insulin? State the onset of action, peak blood level & effective duration of action in hours of different types of insulin.

8+12 = 20

Q4. What is hypoglycemia? Describe the common symptoms & signs of hypoglycemia? How will you manage it?

3+4+4+9 = 20

Q5. Enumerate the etiologic classification of Diabetes Mellitus. Briefly describe the diagnostic criteria of diabetes. What are the risk factors for Type 2 Diabetes Mellitus?

8+6+6 = 20

Q6. Write short notes on (**Any Four**) of the following:-

4 x 7.5 = 30

- a) Medical Nutrition Therapy.
- b) Treatment Goals for adult with diabetes.
- c) Describe Insulin Injection Technique in flow chart.
- d) Enumerate the acute & chronic complications of Diabetes Mellitus.
- e) Prediabetes & prevention of development of T2DM.
