RAJASTHAN PUBLIC SERVICE COMMISSION, AJMER

SYLLABUS OF SCREENING TEST FOR THE POST OF
ASSISTANT PROFESSOR – ENDOCRINOLOGY
MEDICAL & HEALTH (C.B.) DEPARTMENT

A. The basic science of endocrinology and metabolism

1. History of Endocrinology, evoluation of concept of endocrine glands, hormones, intermediary metabolism.
2. Structure of hormones.
3. Regulations of synthesis and secretion of various hormones. Feedback mechanism.
4. Biological rhythms.
5. Molecular basis of action of various steriod and peptide hormones.
6. Basic principles of Genetics, immunology and oncology as applied to clinical endocrinology and metabolism.
7. Laboratory techniques : Hormonal assays, Biochemical lab investigations, cytogenetics, molecular genetics and biochemical genetics of endocrine and metabolic disorders.
8. Basic principles of imaging and their applications in endocrinology.
9. Research methodology : Design of study Epidemiology , statistical methods. Existing and upcoming laboratory techniques in endocrinology and metabolism.

B. Adrenal Glands :

1. Anatomy and physiology of Adrenal gland.
2. Anatomical, biochemical and molecular pathology of various adrenal disorders.
3. Drugs used in treatment of adrenal disorders and diagnosis.
4. Adrenal imaging.
5. Applications of hormonal assays and other biochemical investigations in diagnosis of various adrenal disorders.
6. Epidemiology, Etiopathogenesis, diagnosis and management of various adrenal disorders like :
   cushing syndrome, Addison disease, cogenital adrenal hyperplasia, adrenal tumors, pheochromocytoma, hyperaldosteronism etc.
7. Adrenal disorders in special situations like childhood, adolesence and pregnancy.

C. Metabolic bone disease :

1. Bone ultrastructure and physiology
2. Regulation of calcium, phosphate, magnesium and vitamin D3 metabolism.
3. Hormonal and metabolic investigations in bone disorders.
4. Immaging in metabolic bone disorders.
5. Histomorphometry of metabolic bone diseases.
6. Epidemiology etiopathogensis, diagnosis and management of metabolic bone diseases like :
   Osteoporosis, Ricketts, osteomalacia, Paget's disease, osteogenesis imperfecta, osteoporosis, Mc cune Albright syndrome. Disorders of calcium, phosphate and magnesium metabolism.
7. Hereditary and congenital disorders of bone and mineral metabolism.
8. Bone and mineral metabolic disorders during pregnancy.

D. Pituitary & Hypothalamus :

1. Development, structure of pituitary.
2. Nuclei of hypothalamus and their relation with pituitary functions.
3. Secretion of various releasing hormones of hypothalamus and hormones from pituitary.
4. Causes of growth hormone excess, their clinical presentation, work up of these patients and various modalities of treatment of patients with growth hormone excess.
5. Causes of growth hormone deficiency, their genetic transmission, their presentation and treatment.
6. Space occupying lesions in pituitary, their presentation and management.

E. Posterior pituitary :

1. Development and mechanism of working of posterior pituitary.
2. Mechanism of control of osmolarity
3. Diabetes insipidus: its definition various types, work up and management.
4. Syndrome of inappropriate antidiuretic hormone (SIADH) its presentation and management.

F. Growth failure and short stature :

1. Causes of short stature
2. Presentation of different kind of short stature.
3. Work up of patient of short stature.
4. Treatment of patients of short stature along with growth hormone therapy.
5. Growth hormone resistance.

G. Hypopituitarism :

Various types including congenital, sheehan syndrome, lymphocytic hypophysitis and other varities. Their presentation and management

H. Thyroid gland :

1. Development, structure, vascular supply of thyroid gland.
2. Synthesis and secretion of thyroid hormones and their regulation.
3. Etiopathogensis, presentation work up and management of various thyroid disorders like :
   Hypothyroidism, hyperthyroidism, thyroiditis, tumors and nodules.
4. Iodine deficiency and its presentation.
5. Effect of iodination of salt and development of thyroid disorders.
6. Thyroid hormone resistance.
7. Thyroid disorders during infancy, childhood and pregnancy.

I. Parathyroid gland :

1. Development, anatomic structures, eutopic and ectopic parathyroid glands.
2. Causes, clinical presentation, their evaluation and management of various parathyroid disorders like :
   Hypoparathyroidsm, Hyperparathyroidism, Parathyroid hormone resistance and parathyroid tumors.
3. Management of hypercalcemia.

J. Gonads and puberty :

1. Abnormal development of gonads and genitalia, their presentation, evaluation and management of various disorders like :
   Female pseudohermaphrodite, male pseudohermaphrodite, true hermaphrodite, delayed puberty, precocious puberty.

2. Clinical presentation work up and management of various disorders like hypogonadotropic hypogonadism, hypergonadotropic hypogonadism
3. Somatic stigmata and abnormal pubertal development, work up and management of:
   Turners syndrome, Klinefelter's syndrome, kallmann syndrome.

K. <u>Diabetes Mellitus and Metabolic syndrome</u> :

1. Types of diabetes, classification of diabetes
2. Etiopathegensis, various genetic mutations for development of type 1, type 2 and MODY (Maturity onset diabetes of young).
3. Clinical presentation work up and management of various types of diabetes :
   Type 1
   Type 2
   Gestational diabetes
   Secondary diabetes
   MODY (Maturity onset diabetes of young).
4. Oral drugs for management of diabetes and their classes and mechanism of action.
5. Newer drugs in management of diabetes like :
   Insulin analogues, DPP-IV inhibitors, Exenatide
6. Complications of diabetes, their prevalence, presentation, work up and management of
   (a) Nephropathy
   (b) Neuropathy
   (c) Retinopathy
   (d) Peripheral vascular diseases
   (e) Hypertension
   (f) Ischaemic heart disease

L. <u>MEN (Multiple Endocrine Neoplasia</u>) :

Their types, various glands affected, their genetic transmission, presentation, treatment and management of carrier stage.

M. <u>Auto immune endocrinopathies</u> :

Types, presentation, genetic transmission and management.

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Pattern of Question Papers:

1. Objective Type Paper
2. Maximum Marks : 100
3. Number of Questions : 100
4. Duration of Paper : Two Hours
5. All Questions carry equal marks
6. There will be Negative Marking

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