

PHARMACOLOGY

PAPER- I

PHARMA/D/11/34/I

Time : 3 hours

Max. Marks : 100

**Attempt all questions in order.
Each question carries 10 marks**

1. Discuss the role of transgenic animals in drug research. 10
2. Define Biomarkers and mention the types of Biomarkers used in drug discovery. Outline their potential uses and limitations in Pharmacological research. 6+4
3. Outline the importance of therapeutic drug monitoring. Explain target level strategy in drug monitoring. Give examples of clinical conditions and drugs requiring monitoring. 2+2+6
4. Discuss with suitable examples alternatives to animal experimentation in biomedical research. Discuss their advantages and limitations. 5+5
5. Explain briefly the principle underlying Elisa technique and mention its utility in therapeutics with examples. 5+5
6. Enumerate the methods used in the quantification of receptors. Explain briefly Radio-Ligand binding technique with procedure and precautions. 4+6
7. What are Bioassay and biological standardization? Explain briefly types and application of Bioassay. 4+6
8. What is Pharmacogenomics? Discuss its applications in drug discovery research and in drug safety. 2+4+4
9. Discuss the methods for evaluation of a potential anti-allergic (antihistaminic) drug. Give both experimental animal and clinical steps. 5+5
10. Discuss parametric and non parametric tests in evaluating results of biomedical research. Mention different tests and their applicability. 5+5

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PAPER- II

PHARMA /D/11/34/II

Time : 3 hours

Max. Marks : 100

Attempt all questions in order.

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1. Discuss the therapeutic status and role of beta-blockers in the treatment of heart failure. 4+6
2. Discuss different insulin formulations. Write briefly the current status of development of non-injectable insulin preparations. 5+5
3. Mention different opioid receptors and effects mediated through them. Give features of morphine poisoning and principles of drug used for its management. 5+3+2
4. Discuss the Pharmacological approaches for treatment of Tobacco dependence and withdrawal. 6+4
5. Discuss clinically applicable classification of glucocorticoids with appropriate examples. Enumerate the side effects and drug interactions on chronic use of glucocorticoids. 5+5
6. Discuss the Pharmacology of Reverse Transcriptase Inhibitors with its applications. 6+4
7. What are selective COX-2 inhibitors? Discuss briefly their advantages over non-selective COX inhibitors. What are the evidences for the cardiovascular risks of selective COX-2 inhibitors? What was the basis of banning some COX-2 inhibitors? 2+2+3+3
8. Mention anti-emetic drugs acting on vomiting centre and chemoreceptor trigger zone. Enumerate drugs used for chemotherapy induced vomiting, motion sickness and hyperemesis gravidarum. 5+5
9. Enumerate clinically used haematopoietic growth factors. Discuss their Pharmacology and adverse effects. 4+6
10. Discuss briefly the basic etiopathologies of Alzheimer's disease. What is the role of oxidative stress? Mention the current approaches for management of Alzheimer's disease. 3+3+4

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

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PAPER- III

PHARMA /D/11/34/III

Time : 3 hours

Max. Marks : 100

Attempt all questions in order.

Each question carries 10 marks

1. Describe physiological control of blood pressure. Discuss agents which act by modulating the renin-angiotensin-aldosterone system in the body. 4+6
2. Enumerate the causative micro-organisms responsible for urinary tract infections. Critically evaluate the drugs used for the management of urinary tract infections. Briefly discuss their therapeutic status. 2+5+3
3. Discuss the neuro-endocrine basis, pharmacological management along with the recent advances for the management of obesity. 3+3+4
4. Define drug dependence. Discuss the dynamics of drug dependence. What are the principles employed for the treatment of drug dependence. Give suitable examples 1+3+3+3
5. Define pharmacovigilance. Discuss the scope and methods of conducting pharmacovigilance in a tertiary health care facility. Mention methods of casualty assessment. 1+5+4
6. Describe the regulation of bone mineral homeostasis. Discuss the drugs used in the treatment of osteoporosis. 4+6
7. Discuss the management of drug resistant tuberculosis. What is extensive drug resistance (XDR) and what is the current strategy for its management. 6+4
8. Define irritable bowel syndrome. Discuss its pathophysiology and management. 2+4+4
9. Define monoclonal antibodies. Discuss their therapeutic potential and adverse effects. 2+5+3
10. What do you understand by the term diuretic resistance? Discuss briefly the methods that can be employed to overcome the above resistance. Give suitable examples to illustrate your answers. 4+6

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PAPER- IV

PHARMA/D/11/34/IV

Time : 3 hours

Max. Marks : 100

Attempt all questions in order.

Each question carries 10 marks

1. What are vanilloid receptors? Enumerate the agonists of these receptors. Discuss briefly their mechanism of action and clinical significance. 2+3+2+3
2. Describe the physiological and biochemical aspects of serotonin receptors. Discuss the drugs interacting at these receptors and their therapeutic uses. 3+3+4
3. Discuss the role of nitric oxide (NO) in the pathophysiology of various diseases. Describe various NO modulators. 5+5
4. Describe the physiology of gonadotropin secretion. Discuss the diagnostic and therapeutic uses of gonadotropins. Enumerate various gonadotropin preparations. 2+5+3
5. Discuss in brief the physiology of blood coagulation and fibrinolysis. Describe the mechanism of action, adverse effects and therapeutic uses of low molecular weight heparin. 3+2+2+3
6. Describe the sequence of events involved in neurotransmission. Give suitable examples of drugs acting at each of these steps. 4+6
7. Enumerate the membrane transporters. Discuss the pharmacological importance of these membrane transporters giving suitable examples to illustrate your answers. 3+7
8. Describe endogenous synthetic pathway of cholesterol synthesis. What are the major serum lipoproteins and their pathological implications? Describe the pharmacological target. 2+5+3
9. Define drug antagonism. Discuss various types of drug antagonism with suitable examples. Give examples of use of antagonists in poisonings. 2+5+3
10. Discuss the factors involved in drug disposition during pregnancy. Mention drugs contraindicated in pregnancy and the drugs that can be given in pregnancy. 6+2+2
