This question paper contains 2 printed pages]

CC—02—2017

FACULTY OF PHARMACEUTICAL SCIENCE AND TECHNOLOGY

B.Pharm. (Second Year) (Third Semester) EXAMINATION

MARCH/APRIL, 2017

PHYSICAL CHEMISTRY

Paper BPH-31

(Tuesday, 11-4-2017) **Time : 2.00 p.m. to 4.00 p.m.**

Time—Two Hours *Maximum Marks*—50

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Assume to the point only.

1. Solve any *five* of the following : 5×2=10

   (*a*) Enlist different colligative properties.

   (*b*) State and explain Bragg's equation.

   (*c*) What is partition coefficient ?

   (*d*) Define isobaric and isochoric processes.

   (*e*) What is CMC ?

   (*f*) Define phase rule. Give its applications.

   (*g*) Distinguish between absorption and adsorption.

2. Solve any *four* of the following : 4×3=12

   (*a*) Explain determination of surface tension by drop count method.

   (*b*) State second and third law of thermodynamics.

   (*c*) Explain factors affecting solubility of solids in liquid.

   (*d*) What do you mean by CST of phenol-water system ?

   (*e*) State and explain Raoult's law of lowering of vapour pressure.

   (*f*) What is HCB System ? Draw a sketch showing HCB values for identification of surfactant.

P.T.O.

3. Solve any *four* of the following : 4×7=28

(*a*) Define adsorption isotherm. Explain its different types.

(*b*) What is elevation of boiling point. Give its methods for determination.

(*c*) Explain different thermodynamic processes.

(*d*) Explain in detail X-Ray crystallography.

(*e*) Define Electrolysis. Explain Faraday's first and second law of electrolysis.

(*f*) Define liquefication of gases. Give its determination by Linde's method.

This question paper contains **2** printed pages]

CC—08—2017

FACULTY OF PHARMACEUTICS

B. Pharm. (Third Semester) EXAMINATION

MARCH/APRIL, 2017

PHARMACEUTICAL MICROBIOLOGY

(Thursday, 13-4-2017) **Time : 2.00 p.m. to 4.00 p.m.**

Time—Two Hours *Maximum Marks*—50

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Illustrate your answer with neat sketches wherever necessary.

1. Solve any *five* of the following : 5×2=10

(*i*) Write any *four* characteristics of staphylococci.

(*ii*) Write any *four* properties of viruses.

(*iii*) Give clinical significance of candida albicans.

(*iv*) Differentiate between prokaryotic and eukaryotic cell.

(*v*) List out methods of reproduction in bacteria.

(*vi*) What are Protozoa ?

(*vii*) What are dermatophytes ? Give examples.

2. Solve any *four* of the following : 4×3=12

(*i*) Write in short about enrichement media and diagnostic media.

(*ii*) Write about helical symmetry of viruses.

(*iii*) What is superficial and deep mycoses ?

(*iv*) Give the role of Louis Pasteur in the development of microbiology.

(*v*) Give the classification of protozoa.

(*vi*) What is bacterial conjugation ? Explain with diagram.

P.T.O.

3. Solve any *four* of the following : 4×7=28

(*i*) Explain bacterial growth curve with a diagrammatic representation.

(*ii*) Explain the lytic and lysogenic cycles in viruses.

(*iii*) Explain sporulation and germination in bacteria.

(*iv*) Describe the cultivation of viruses in chick embryo with its advantages and disadvantages.

(*v*) Describe the structure of HIV virus with a neat, labelled diagram.

(*vi*) Explain various physical conditions required for bacterial growth.

This question paper contains 2 printed pages]

CC—14—2017

FACULTY OF PHARMACEUTICAL SCIENCE

B-Pharm. (Third Semester) EXAMINATION

MAY/JUNE, 2017

ORGANIC CHEMISTRY–III

(Thursday, 4-5-2017) **Time : 2.00 p.m. to 4.00 p.m.**

Time— Two Hours *Maximum Marks*—50

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Answer to the point only.

(*iii*) Figure to the right indicate full marks.

1. Solve any *five* of the following : 5×2=10

(*i*) Write the resonance structure of Napthalene.

(*ii*) What do you mean by whitmore 1,2 shift.

(*iii*) Draw the structure and numbering of (*i*) hydantion (*ii*) Phcnothiazine

(*iv*) Write any *two* electrophilic substitution reaction of Furan.

(*v*) Define atom economy

(*vi*) Write the principle and reaction of Benzil-Beorilic acid rearrangement.

(*vii*) Write the synthesis of pyridine from B-picolene.

2. Solve any *four* of the following : 3×4= 12

(*i*) Write the IUPAC Name (*a*) Pyrrol, (*b*) Benzofuran (*c*) Pyrimidine

(*ii*) What is sigmatropic rearrangement. Write the mechanism of cope rearrangement.

(*iii*) Enlist various green techniques used in synthesis. Explain any *one*.

P.T.O.

(*iv*) Write the proof in napthalene *two* benzene ring are fused together.

(*v*) Write any *two* methods for synthesis of furan.

(*vi*) Write the mechanism of Dakin rearrangement.

3. Solve any *four* of the following : 7×4=28

(*i*) Write the principle machanism and application of pinacol-Pinacolone rearrangement.

(*ii*) Write any *two* methods for synthesis of Irridazole. Write any *three* chemical poop of irridazole.

(*iii*) Enlist any *one* electron deficient 'O' atom rearrangement. Write any *one* rearrangement in detail.

(*iv*) (*a*) Define hetrocylic compound classify them with suitable example.

(*b*) Write the synthesis of pyrimidine from malonic ester and 2,4 - dichloro pyrimidine.

(*v*) Write the mechanism of :

(*i*) Backmann rearrangement

(*ii*) Favoraski rearrangement

(*vi*) Write any *two* synthesis method of napthalene. Why α-product is predomineht over β-product in napthalene.

This question paper contains 2 printed pages]

CC—20—2017

FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

B. Pharm. (Second Year) (Third Semester) EXAMINATION

MARCH/APRIL, 2017

CLINICAL BIOCHEMISTRY

(Thursday, 20-4-2017) **Time : 2.00 p.m. to 4.00 p.m.**

Time—Two Hours *Maximum Marks*—50

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Draw pathways or reactions wherever necessary.

(*iii*) Figures to the right indicate full marks.

1. Solve any *five* of the following : 5×2=10

   (*a*) Define the term Biochemistry.

   (*b*) Write normal values of SGPT, SGOT, creatinine, acid phosphatase.

   (*c*) Enlist the disease causes of obesity.

   (*d*) Define the term respiratory quotient and write normal values.

   (*e*) Enlist tests of gastric function tests.

   (*f*) Write deficiency diseases of vitamin C and vitamin A.

   (*g*) Enlist eneryg inputs and outputs.

2. Solve any *four* from the following : 4×3=12

   (*a*) Explain the steps involved in fate of carbon skeleton of amino acids.

   (*b*) Write cause, biochemical mechanism and treatment of galactosemia.

   (*c*) Give details about liver function tests.

   (*d*) Write reversible steps involved in glycolysis and steps that generates ATP.

   (*e*) Explain the term oxidative phosphorylation.

   (*f*) Explain the analytical uses of any *six* enzymes.

3. Solve any *four* from the following : 4×7=28

   (*a*) Write in detail about collection methods and testing of blood samples.

P.T.O.

(*b*) Explain in detail about Renal function tests.

(*c*) Write steps and reactions involved in Krebs-Henseleit's cycle and energetics involved in it.

(*d*) Write an impaired energy processing as mechanism for energy imbalance.

(*e*) Explain about uses of biochemical data in clinical medicine.

(*f*) Write enzyme involved, biochemical mechanism of :

(*i*) Kwashiorkor

(*ii*) Gout.

This question paper contains 2 printed pages]

DM—22—2016

FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

B.Pharmacy (Third Semester) EXAMINATION

OCTOBER/NOVEMBER, 2016

INTRODUCTION TO PHARMACEUTICAL ANALYSIS

Paper BPH-35

(Friday, 25-11-2016) **Time : 2.00 p.m. to 4.00 p.m.**

Time—2 *Hours* *Maximum Marks*—50

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Figures to the right indicate full marks.

(*iii*) Answer to the point only.

1. Solve any *five* of the following : 10

(*a*) Enlist the steps in quantitative analysis.

(*b*) State *four* hazards in sampling.

(*c*) Define LOD and LOQ.

(*d*) Give the formulae for SD and CV.

(*e*) What is co-precipitation and post precipitation ?

(*f*) Define mole fraction and equivalent weight.

(*g*) How will you determine end point in volumetric methods ?

2. Solve any *four* of the following : 12

(*a*) Explain solubility concept and standardization of pharmaceuticals as per official monographs.

(*b*) Give the procedure for the calibration of volumetric flask.

(*c*) Explain assay of aluminium in alum.

(*d*) Write theory of oxygen flask combustion technique with determination of iodine.

(*e*) What are primary and secondary standard substances ? Give the requirements for primary standard substance.

(*f*) Define sampling. Explain sampling procedure.

P.T.O.

3. Solve any *four* of the following : 28 | 18

(*a*) Explain theory and applications of Karl Fisher Titration.

(*b*) Discuss in detail nitrogen determination by Kjeldahl method. – 5

(*c*) Write advantages, disadvantages and steps involved in Gravimetric analysis. – 5

(*d*) What is concept of errors ? Classify the errors. How will you minimise the errors ? – 4

(*e*) What is precipitation ? Give the conditions for precipitations. Explain properties and purification of precipitates.

(*f*) Define volumetric analysis. Classify the volumetric methods and give the requirements of volumetric methods. – 4

81641ADF8B6870D78C2FDF5EFECAF229

This question paper contains 2 printed pages]

CC—32—2017

FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

B. Pharm. (Second Year) (Third Semester) EXAMINATION

MARCH/APRIL, 2017

PLANT GENETICS AND TISSUE CULTURE

(Tuesday, 25-4-2017) **Time : 2.00 p.m. to 4.00 p.m.**

Time—Two Hours *Maximum Marks*—50

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Draw well labelled diagram wherever necessary.

(*iii*) Figures to the right indicate full marks.

1. Solve any *five* of the following : 5×2=10

(*a*) Define plant tissue culture.

(*b*) Define chemical races.

(*c*) Enlist different sterilization techniques in plant tissue culture.

(*d*) Define cellular totipotency.

(*e*) Give the role of polyethylene glycol in gene transfer.

(*f*) Give any *one* example of mutation and hybridization.

(*g*) What is enzyme inhibition ?

2. Solve any *four* of the following : 4×3=12

(*a*) Give the objectives of gene therapy.

(*b*) Describe agrobacterium tumefaciens induced method of gene transfer.

(*c*) Describe the plant tissue culture technique using ovary as explant.

(*d*) Define polyploidy classify it with example.

(*e*) Write note on Gene splicing in plant tissue culture.

(*f*) Define Genetic engineering. Explain hybridization technique.

P.T.O.

3. Solve any *four* of the following : 4×7=28

(*a*) Give the historical development and applications of plant tissue culture.

(*b*) What is gene therapy ? Give applications of gene therapy in various plant diseases.

(*c*) What is γ-DNA Technology ? Give role of γ-DNA Technology in development of plant.

(*d*) Define enzyme immobilization. Write in detail about immobilization techniques.

(*e*) Write in detail about cloning vector and artificial mutation.

(*f*) Give the composition for nutritional requirements, growth and maintenance for plant tissue culture.

This question paper contains 2 printed pages]

CC—38—2017

FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

B. Pharm. (Second Year) (Third Semester) EXAMINATION

MARCH/APRIL, 2017

INTRODUCTION TO UNIT OPERATIONS

Paper BPH-37

(Thursday, 27-4-2017) **Time : 2.00 p.m. to 4.00 p.m.**

Time—Two Hours *Maximum Marks—50*

N.B. :— (*i*) *All* questions are compulsory.

(*ii*) Draw neat labelled diagrams wherever necessary.

1. Solve any *five* of the following : 5×2=10

(*a*) Distinguish between steady state and non-steady state.

(*b*) Name the five important plastics with their applications.

(*c*) Write the mechanism of size reduction.

(*d*) Write Kozeny-Carman equation.

(*e*) What is the purpose of Pitot tube ? Give its advantages and disadvantages.

(*f*) Give principle and advantages of pneumatic conveyor.

(*g*) What do you mean by vortex ? How is it prevented ?

2. Solve any *four* of the following : 4×3=12

(*a*) Explain material balance and energy balance.

(*b*) What are the properties of glass ? What are its applications as a material of constructions ?

(*c*) Explain principle and working of venturimeter with neat sketch.

(*d*) Explain mechanism of Filtration with diagram.

(*e*) Describe construction, working, merits and demerits of double acting reciprocating pump.

(*f*) Describe the mechanism of liquid mixing.

P.T.O.

3. Solve any *four* of the following : 4×7=28

(*a*) Classify materials of construction with examples from each class.

(*b*) Explain in detail with its expression of Bernoullis Theorem.

(*c*) Describe principle, construction, working, advantages and disadvantages of belt conveyors.

(*d*) Explain in detail with neat diagram of plate and frame filter process.

(*e*) Write in detail different modes and methods of size separation. Give the specification of standard sieve as per IP.

(*f*) Define various types of mixing process. Explain in brief various devices used for mixing.

This question paper contains 2 printed pages]

CC—43—2017

FACULTY OF PHARMACEUTICAL SCIENCE

B. Pharm. (Third Semester) EXAMINATION

MARCH/APRIL, 2017

CAUSES OF DISEASE AND PREVENTION

Paper BPH-38

(Saturday, 29-4-2017) **Time : 2.00 p.m. to 4.00 p.m.**

Time—Two Hours *Maximum Marks*—50

N.B. :— (*i*) *All* questions are compulsory.

(*ii*). Answer to the point only.

(*iii*) Illustrate your answer with neat sketches wherever necessary.

1. Answer any *five* of the following : 5×2=10

(*a*) Define the terms Health and disease.

(*b*) Give cardinal signs of inflammation.

(*c*) Enlist the structural and regulatory proteins of skeletal muscles.

(*d*) What are membrane potential and action potential ?

(*e*) What is Atherosclerosis ?

(*f*) Define anemia and enlsit its type.

(*g*) Enlist the component of Immune system.

2. Answer any *four* of the following : 4×3=12

(*a*) Write the component of disease.

(*b*) Write about Positive and Negative feedback mechanism in Adaptation.

(*c*) Define Receptors and classify it.

(*d*) What are Uniport, Antiport and Symport ?

(*e*) What is angina pectoris ? Write about its type.

(*f*) Define Hypersensitivity and classify its type.

P.T.O.

3. Answer any *four* of the following : 4×7=28

(*a*) Define Hypertension. Write its etiology, pathophysiology, clinical manifestations and treatment of Hypertension.

(*b*) What is inflammation ? Give basic mechanism involved in inflammation process.

(*c*) Write in detail about General Adaptation Syndrome and General System theory.

(*d*) Write etiology, pathophysiology and clinical manifestations of AIDS.

(*e*) Write the normal mechanism of skeletal muscle contraction.

(*f*) Define action potential and write the phases of action potential in cardiac muscles.