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CZ—2—2018

FACULTY OF PHARMACEUTICAL SCIENCES

B.Pharm. (Third Semester) EXAMINATION

MARCH/APRIL, 2018

PHYSICAL CHEMISTRY

Paper BPH-31

(Friday, 20-4-2018)

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 answers with neat sketches whenever necessary.

(iii) Figures to the right indicate full marks.

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

- (a) State Dalton's law of partial vapour pressure.
- (b) Define osmosis.
- (c) What is partition coefficient ?
- (d) Define surface tension.
- (e) What is CMC ?
- (f) State and explain second law of thermodynamics.
- (g) Give pharmaceutical applications of surfactants.

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

- (a) Explain Joule-Thomson's effect. Give its applications.
- (b) State and explain Faraday's first law of electrolysis with its importance.
- (c) Explain determination of critical constant.
- (d) What is HLB system ? Draw a sketch showing HLB values in Pharmaceutical agents.
- (e) Define enthalpy. Give its applications.
- (f) Define polymorphism. Give its applications.

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3. Solve any *four* of the following :

4×7=28

- (a) Define liquefaction of gases. Give determination of gases by Claupe's method.
- (b) Define adsorption isotherm. Explain Langmuir adsorption isotherm.
- (c) State and explain Hess's law of constant heat of summation with suitable example.
- (d) Explain electrical properties of interface.
- (e) What is depression of freezing point ? How is it determined ?
- (f) Define X-Ray Crystallography. Derive Bragg's equation for crystal structure.

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**CZ—10—2018**

**FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY**  
**B.Pharm. (Third Semester) EXAMINATION**  
**MARCH/APRIL, 2018**  
**PHARMACEUTICAL MICROBIOLOGY**  
**(BPH-32)**

**(Monday, 23-4-2018)**

**Time : 2.00 p.m. to 4.00 p.m.**

**Time—2 Hours**

**Maximum Marks—50**

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

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

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

1. Solve any *five* of the following :

5×2=10

- (a) Give the functions of bacterial capsule.
- (b) Give the characteristics of staphylococci.
- (c) List out various techniques of cell culture for cultivation of viruses.
- (d) What are Protozoa ?
- (e) What is an enrichment media ?
- (f) Define chemotrophs and autotrophs.
- (g) What are bacteriophages ?

2. Solve any *four* of the following :

4×3=12

- (a) List out various methods of bacterial growth measurement. Explain any *one*.
- (b) Give any *three* biochemical test for categorising bacteria.
- (c) Describe helical symmetry in viruses with a well-labelled diagram.
- (d) Give the industrial importance of fungi.
- (e) Enlist types of bacterial reproduction. Explain any *one*.
- (f) Give the role of Louis Pasteur in the development of Microbiology.

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3. Solve any *four* of the following :

4×7=28

- (a) Describe the structure of bacterial cell with a neat and labelled diagram.
- (b) Differentiate the lytic and lysogenic life cycles of bacteriophages.
- (c) Give the classification and industrial importance of fungi.
- (d) Describe the cultivation of viruses in chide embryo with its advantages and disadvantages.
- (e) Write notes on the following :
  - (i) Interferons
  - (ii) Tumor viruses.
- (f) Describe the various stages in the bacterial growth curve.

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**CZ—18—2018**

**FACULTY OF PHARMACEUTICAL SCIENCE**

**B.Pharm. (Third Semester) EXAMINATION**

**MARCH/APRIL, 2018**

**ORGANIC CHEMISTRY—III**

**(Wednesday, 25-4-2018)**

**Time : 2.00 p.m. to 4.00 p.m.**

**Time—2 Hours**

**Maximum Marks—50**

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

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

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

1. Solve any *five* of the following :

5×2=10

- (a) Define molecular rearrangement and enlist its types.
- (b) Draw the structure and give the numbering for naphthalene and anthracene.
- (c) Comparison between microwave synthesis and conventional synthesis.
- (d) Write any *two* nucleophilic substitution reaction of pyridine.
- (e) Draw resonance hybrid structure of pyridine.
- (f) How will you prepare furan from Paal-Knorr synthesis ?
- (g) Give application of Beckmann rearrangement.

2. Solve any *four* of the following :

4×3=12

- (a) Why  $\alpha$ -substituted product predominant over  $\beta$ -substituted product in naphthalene ?
- (b) Define Green Chemistry. Give its importance.
- (c) Enlist the rearrangement in which N-atom is electron deficient and explain the mechanism of any *one*.

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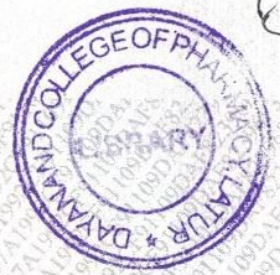
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- (d) Give any *two* preparation of pyrimidine.
- (e) Give the principle and mechanism of Fries rearrangement. ✓
- (f) Give any *three* chemical reactions of Indole.
3. Solve any *four* of the following : 4×7=28
- (a) Give principle, mechanism and application of Hoffmann rearrangement. ✓
- (b) Define Heterocyclic compound and classify with suitable example.
- (c) (i) Write down the preparation of pyrimidine from malonic ester, formamide.
- (ii) Explain Skraup synthesis and Doebner-Miller synthesis of quinoline.
- (d) Enlist the rearrangement in which  $\alpha$ -atom is electron rich. Write any *one* rearrangement in detail.
- (e) Explain the mechanism and application of Dakin rearrangement and ✓ Benzil-Benzilic acid rearrangement.
- (f) Write any *three* synthesis for imidazole and pyridine.

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**CZ—26—2018**

**FACULTY OF PHARMACEUTICAL SCIENCES**

**B.Pharmacy (Third Semester) EXAMINATION**

**MARCH/APRIL, 2018**

**CLINICAL BIOCHEMISTRY**

**(Friday, 27-4-2018)**

**Time : 2.00 p.m. to 4.00 p.m.**

*Time—2 Hours*

*Maximum Marks—50*

*N.B. :- (i) Solve All questions.*

*(ii) Draw a pathways wherever necessary.*

*(iii) Write net equations.*

1. Solve any *five* of the following :

5×2=10

(a) What is meant by Arginemia ?

(b) Define BMR and write factors affecting on BMR.

(c) Classify Amino acids according to end product obtained with example.

(d) Write on energy input and output.

(e) Define Clinical Biochemistry and write its Branches.

(f) Define Galactosemia and its causes.

(g) Enlist enzymes used analytically.

2. Answer any *four* from the following :

4×3=12

(a) Write on metabolism of carbon Skeleton.

(b) Draw various reactions showing citric acid cycle with net reactions.

(c) Write on glycogen storage diseases and explain causes and treatment of Von Girek's disorder.

P.T.O.



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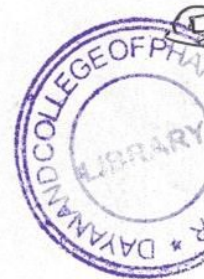
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- (d) Write on causes, physiology, signs and symptoms and treatment of Kwashiorkor.
- (e) Explain the tests involved in Gastric function tests.
- (f) Write uses of biochemical data in clinical medicine.
3. Answer any *four* from the following : 4×7=28
- (a) Write about any *seven* enzymes and their diagnostic uses.
- (b) Define and explain mechanism of mitochondrial B-Oxidation.
- (c) Define and explain Govt and Xanthinuria with their causes, signs and symptoms, mechanism and treatment.
- (d) What will happen when glucose molecule undergo metabolism. Write its reactions involved in it with energy generations.
- (e) Write the tests involved in assessing liver function.
- (f) Write causes, mechanisms, signs and symptoms and treatment on :
- (i) N-A cetylglutamate Synthase deficiency
- (ii) Hyperlipidemia.

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**CZ—34—2018**

**FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY**

**B. Pharm. (Third Semester) EXAMINATION**

**MAY/JUNE, 2018**

**INTRODUCTION TO PHARMACEUTICAL ANALYSIS**

**(Wednesday, 2-5-2018)**

**Time : 2.00 p.m. to 4.00 p.m.**

*Time—2 Hours*

*Maximum Marks—50*

- N.B. :-*
- (i) All questions are compulsory.
  - (ii) Your answer should be specific to the question asked.
  - (iii) Draw neat labelled diagram wherever possible.
  - (iv) Numbers to the right indicate full marks.

1. Answer any *five* of the following : 10
- (a) Define :
    - (i) Increment
    - (ii) Gross sample.
  - (b) Calculate normality of NaOH solution, if 250 ml of solution contains 1 g NaOH.
  - (c) What is criteria of choice of analytical method ?
  - (d) Define :
    - (i) Precision
    - (ii) Relative error.
  - (e) How many significant figures are in the following numbers :
    - (i) 0.03045
    - (ii) 1.2048
    - (iii) 12169.09
    - (iv) 0.02100.
  - (f) Write the limitations of Kjeldahl method.
  - (g) Give the formulae for T-test and F-test.

P.T.O.

2. Answer any *four* of the following : 12
- (a) Define and classify volumetric method in detail.
  - (b) Describe the various steps involved in quantitative analysis.
  - (c) Write the principle and chemical reactions of assay of sodium sulphate.
  - (d) Sketch a neat labelled diagram of Kjeldahl's method.
  - (e) Explain Q-test with suitable example.
  - (f) Write the ideal requirements of primary standard.
3. Answer any *four* of the following : 28
- (a) Write principle, chemical reaction and procedure of Karl Fischer method.
  - (b) Enlist methods of minimization of error and explain any *three*.
  - (c) Percentage purity of assay of ferrous sulphate is found as follows :  
**Analyst I** : 99.5, 98.7, 99.4, 99.8, 99.6 and 99.3%  
**Analyst II** : 100.1, 100.2, 100.4, 99.9, 99.8 and 100.4%  
Calculate the F-value for the given sets of result by applying F-test.
  - (d) Explain the oxygen flask combustion method.
  - (e) Explain various steps involved in gravimetric analysis.
  - (f) Explain with example, how pharmaceuticals are standardized as per official monograph.



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**CZ—42—2018**

**FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY**

**B.Pharm. (Third Semester) EXAMINATION**

**MAY/JUNE, 2018**

**PLANT GENETICS AND TISSUE CULTURE**

**(BPH-36)**

**(Friday, 4-5-2018)**

**Time : 2.00 p.m. to 4.00 p.m.**

**Time—2 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) Define plant tissue culture.
- (b) Define mutation.
- (c) Enlist types of culture.
- (d) Give objectives of gene therapy.
- (e) Give any four examples of plant growth regulators.
- (f) Define and classify enzymes.
- (g) Give any two examples of hybridization of plants.

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

- (a) Describe the concept artificial mutations in plants.
- (b) Give the applications plant tissue culture in pharmacognosy and pharmacobiotechnology.
- (c) Explain gene transfer by using agrobacterium tumerfaciens bacteria.
- (d) What is enzyme immobilization ? Give its advantages.
- (e) Write about transgenic plants.
- (f) Describe the concept of chemical races.

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3. Solve any *four* of the following :

4×7=28

- (a) Define recombinant DNA technology. Explain gene splicing and DNA ligase.
- (b) What is cell culture ? Describe the composition of culture media for plant tissue culture.
- (c) Discuss various methods of immobilization of enzymes.
- (d) Write applications of gene therapy in various plant diseases.
- (e) What is polyploidy ? Describe the role of genetic engineering in plants.
- (f) Describe callus culture and suspension culture techniques for various parts of plants.



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**CZ—50—2018**

**FACULTY OF PHARMACEUTICAL SCIENCES**

**B. Pharm. (Third Semester) EXAMINATION**

**MAY/JUNE, 2018**

**INTRODUCTION TO UNIT OPERATION**

**BPH-37**

**(Tuesday, 8-5-2018)**

**Time : 2.00 p.m. to 4.00 p.m.**

**Time—2 Hours**

**Maximum Marks—50**

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

**(ii) Draw the diagram wherever necessary.**

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

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

- (a) Define unit operation with examples.**
- (b) Enlist the types of glass used for construction of plants.**
- (c) Define filtration.**
- (d) What is Reynolds number ?**
- (e) Enlist the types of pumps.**
- (f) Define valves. Enlist different types of valves.**
- (g) Enlist the types of segregation.**

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

- (a) Give the mechanism of solid mixing.**
- (b) Define size reduction. Give its advantages.**
- (c) Write the construction and working of drum filter.**
- (d) Give the construction of simple manometer.**
- (e) Explain in brief about reciprocating pump.**
- (f) Discuss in brief about Reynolds experiments.**

**P.T.O.**

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7×4=28

3. Solve any *four* of the following :

- (a) Write principle, construction, working, advantages and disadvantages of plate and frame filter press.
- (b) Explain in detail classification of materials for construction of plants.
- (c) Write principle, construction, working, advantages and disadvantages of belt conveyors.
- (d) Explain in detail mechanism of size reduction with examples. Discuss about ball mill.
- (e) Write the statement with detail explanation of Bernoulli's theorem.
- (f) Write answers of the following :
  - (i) Define pumps. Enlist its type.
  - (ii) Differentiate between surface filtration and death filtration.
  - (iii) Write the factor affecting rate of filtration.

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**CZ—57—2018**

**FACULTY OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY**

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

**MAY/JUNE, 2018**

**CAUSES OF DISEASE AND PREVENTION**

**(BPH-32)**

**(Saturday, 12-5-2018)**

**Time : 2.00 p.m. to 4.00 p.m.**

**Time—2 Hours**

**Maximum Marks—50**

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

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

**(iii) Draw neat labelled diagram wherever possible.**

**1. Answer the following (any five) :**

**5×2=10**

- (a) Define the term adaptation and homeostasis.**
- (b) Give component of immune system.**
- (c) Mention structural and regulatory proteins and skeletal muscles.**
- (d) Define hypertension and enlist its types.**
- (e) Give cardinal sign of inflammation.**
- (f) Define anaemia and enlist its types.**
- (g) Define the terms health and disease.**

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

**4×3=12**

- (a) Explain in brief component of disease process.**
- (b) Discuss pathophysiology and clinical manifestation of Leukemia.**
- (c) Write etiology pathophysiology and clinical manifestation of AIDS.**
- (d) Explain Renin angiotension aldosterone system.**
- (e) Write abnormal mechanism of muscle contraction.**
- (f) Discuss in detail mechanism of conduction over long distance and short distance.**

**P.T.O.**

3. Solve any *four* of the following :

4×7=28

- (a) Write the abnormal mechanism of intercellular communication.
- (b) What is inflammation ? Give basic mechanism of inflammation.
- (c) Define action potential. Write phases of action potential.
- (d) Describe the stages of cross bridge cycle of skeletal muscles.
- (e) Write etiopathophysiology, clinical manifestation and treatment of hypertension.
- (f) Explain in detail stress theory.