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SEAT No. :

P-869

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[6019]-3011

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Second Year B. Pharmacy

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**BP-301 T : Pharmaceutical Organic Chemistry - II**  
**(2019 Pattern) (Semester - III)**

Time : 3 Hours]

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[Max. Marks : 75

Instructions to the candidates:

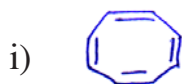
- 1) All questions are compulsory.
- 2) Figures to the right indicate full marks.

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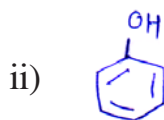
Q1) Answer any 5 (3 marks each) :

[15]

- a) Apply Huckel's rule of aromaticity and differentiate following compounds into aromatic and non-aromatic or anti-aromatic compound.



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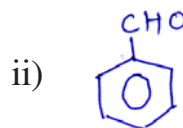
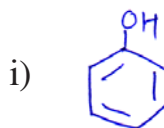


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- b) Explain basicity of amines.

- c) Draw resonating structures of the following :



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- d) Write any three methods of preparation of amines.

- e) Define rancidity. Give its significance.

- f) Explain acidity of phenols.

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- g) Define Aromaticity with suitable examples.

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**Q2)** Answer any 2 (10 marks each) **[20]**

a) Classify ortho / para and meta directing groups (mono substituted benzene) from the following :

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- |                    |                    |
|--------------------|--------------------|
| i) $-\text{NH}_2$  | ii) $-\text{CH}_3$ |
| iii) $-\text{CHO}$ | iv) $-\text{NO}_2$ |

Justify any one ortho / para / meta directing group with resonance.

b) Define and classify stereoisomerism. Write in detail about Geometrical isomerism. <https://pharmacyindia.co.in/>

c) Write synthesis, reactions and structure & medicinal uses of Naphthalene. <https://pharmacyindia.co.in/>

d) Explain the stability of cycloalkanes in detail.

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**Q3)** Answer the any 8 (5 marks each) : **[40]**

a) Write structure, synthesis and medicinal uses of phenanthrene.

b) Explain structure, synthesis and medicinal uses of Triphenylmethane.

c) Explain sulphonation and halogenation of benzene.

d) Explain the effect of hydroxyl and chlorine substituent on nitration of benzene. <https://pharmacyindia.co.in/>

e) Define polynuclear hydrocarbons. Give any two synthesis of anthracene.

f) Explain in detail Saches Mohr's theory. <https://pharmacyindia.co.in/>

g) Write any two methods of synthesis of cyclobutane and cyclopropane.

h) Write a note on structure and uses of phenol, cresol and resorcinol.

i) Explain Hinsberg test for amines. <https://pharmacyindia.co.in/>

j) Explain hydrolysis and hydrogenation of fats and oils.

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P-870

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[6019]-3012

S.Y. B. Pharmacy

BP 302T : PHYSICAL PHARMACEUTICS - I  
(2019 Pattern) (Semester - III)

Time : 3 Hours]

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[Max. Marks : 75

Instructions to the candidates:

- 1) All questions are compulsory.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.

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Q1) Objective Type Questions (Answer Any Five) :

[15]

- a) Give application of distribution law.
- b) Write in brief about solubility expressive.
- c) What you know about soresens pH scale?
- d) Define Buffer capacity. Enlist the methods to determine it.
- e) Define surface tension. Enlist the factors affecting on it.
- f) Write pharmaceutical application of protein drug binding.
- g) Application of gases in liquid in pharmacy.

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Q2) Long Answer Question (Any Two) :

[2 × 10 = 20]

- a) Liquification of gases. Factors & methods.
- b) Factors affecting on solubility of solid in liquids.
- c) Describe crystals in details along with different method for determination.
- d) Discuss in details methods for complex formation and its stability constant.

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Q3) Short Answer Question (Any Eight) :

[8 × 5 = 40]

a) HLB scale - Application & methods.

b) Eutetic mixture.

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c) Aerosols preparation.

d) Polymorphism.

e) Solubility Parameters

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f) Complexation in Pharmacy.

g) Measurement of surface tension.

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h) Tonisity adjustment.

i) Gibbs phase Rule.

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j) Surface active agent.

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[6019]-3013

Second Year B. Pharmacy

BP-303T : Pharmaceutical Microbiology

(2019 Pattern) (Semester - III)

Time : 3 Hours]

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[Max. Marks : 75

Instructions to the candidates:

- 1) All questions are compulsory.
- 2) Figures to the right indicate full marks.

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Q1) Attempt any 5 out of 7 :

[5 × 3 = 15]

- a) Explain 'Whittaker's five kingdom concept'.
- b) Enlist different techniques used for preservation of bacterial culture.
- c) Differentiate between gram positive and gram negative bacteria.
- d) Explain importance of fungi.
- e) Enlist factors affecting microbial spoilage.
- f) Give ideal properties of disinfectant.
- g) Define probiotic & give its examples.

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Q2) Attempt any 2 out of 4 :

[2 × 10 = 20]

- a) Write in detail different sources & types of microbial contaminants in aseptic area. How will you assess microbial contamination & spoilage?
- b) Give classification & mode of action of disinfectants. Discuss different factors influencing disinfection.
- c) Write in detail identification of bacteria by biochemical test.
- d) Discuss lytic & lysogenic cycle of bacteriophage.

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Q3) Attempt any 8 out of 10 :

[8 × 5 = 40]

- a) Write a note on MLT. <https://pharmacyindia.co.in/>
- b) Write a note on dark field microscopy.
- c) Explain growth curve of bacteria.
- d) Write a note on autoclave.
- e) Discuss different methods of cultivation of human viruses.
- f) Write a note on laminar air flow equipment. <https://pharmacyindia.co.in/>
- g) Discuss applications of cell culture in pharma industry.
- h) Discuss various physical parameters required for growth of bacteria.
- i) Write a note on culture media.
- j) Write a note on sterility indicators.

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**S.Y.B.Pharmacy**

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**PHARMACEUTICAL ENGINEERING  
(2019 Pattern) (Semester - III) (BP304T)**

*Time : 3 Hours]*

*[Max. Marks : 75*

*Instructions to the candidates:*

- 1) *All questions are compulsory.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*

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**Q1)** Answer the following questions any five.

**[15]**

- a) Ball mill is not useful for size reduction of fibrous material. Explain.
- b) What are manometers? What different types of manometers do you know?
- c) Give statement for, along with equation (final), for fourier's law and stefan - Boltzmann law.
- d) Define centrifugation. Give applications of centrifugation.
- e) Draw neat and labelled diagram for plate & frame filter used in filtration process.
- f) In short explain size separation and its importance in pharmacy.
- g) Explain advantages and disadvantages of plastic as materials.

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**Q2)** Attempt any two from the following questions.

**[20]**

- a) What do you mean by fluid flow, fluid statics and fluid dynamics? Differentiate between orifice meter and venturimeter. Describe venturimeter in detail.
- b) Derive fourier's law. Explain in detail; Heat exchangers.
- c) Define distillation. Explain the principle and working of steam distillation.
- d) Classify equipments used for mixing of semisolids. Describe the principle, construction and working of ribbon blender.

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Q3) Attempt any eight of the following questions. [40]

- a) Explain the Reynold's experiment, give its significance. <https://pharmacyindia.co.in/>
- b) Explain principle, construction & Working of Ball mill.
- c) Explain principle, construction & working of cyclone separator.
- d) Differentiate between evaporation, distillation and drying. Explain the factors affecting evaporation. <https://pharmacyindia.co.in/>
- e) Explain the principle of molecular distillation.
- f) Explain principle, construction, working & uses of planetary mixer.
- g) Explain principle, construction, working & uses of fluidized bed dryer.
- h) Explain theory & factors affecting filtration. <https://pharmacyindia.co.in/>
- i) Explain principle, construction, working of perforated basket centrifuge.
- j) Write a note on ferrous metal as material for plant construction.

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