

Registration no:

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Total Number of Pages: 2

B.PHARM
15PH201

(New)

2nd Semester Regular / Back Examination 2016-17

PHARMACEUTICAL ANALYSIS - I

BRANCH: Pharmacy

Time: 3 Hours

Max marks: 100

QUESTION CODE: Z459

Answer Part-A which is compulsory and any four from the Part-B.

The figures in the right hand margin indicate marks.

Part-A (Answer all the questions)

Q.1

Answer the following:

(2 x 10)

- a) All the complex are chelating agents (True/False)
- b) In titration the solution which is generally taken in burette is called _____ and which is analyzed is called _____.
- c) _____ is used as coating material in Vohlard's method of titration.
- d) In preparation of 0.1N perchloric acid _____ & _____ are used as solvents.
- e) Give the full form of TBAH _____ and it is used in _____ titrations.
- f) Two types of iodine titration are _____ & _____.
- g) _____ is used as a masking agent and _____ is used as a demasking agent.
- h) EDTA is the most preferred titrant in complexometric titration. The other two titrants are _____ and _____.
- i) _____ is preferred over sodium methoxide in non-aqueous titration as it does not for _____.
- j) Titration error is the difference between _____ and _____.

Q.2

Answer the following

(2x10)

- a) Differentiate between qualitative and quantitative analysis.
- b) Explain ionic product of water.
- c) Define and differentiate between accuracy and precision?
- d) Write down the principle for Vohlard's method
- e) Name the different types of solvents used for non-aqueous titration.
- f) What is self indicator? Give examples.

- g) What are ligands? Classify them with example.
 h) What are buffer? Give at least two characteristics of buffer.
 i) Why acetic anhydride is used for preparation of 0.1N perchloric acid?
 j) Calculate the change in state for potassium dichromate. Name the indicator used for dichromate titrations.

Part-B (Answer any four questions)

- Q.3** a) What are advantages of non aq. Titration? **3**
 b) Write a note preparation and standardization of 0.1N TBAH. Add a note on assay of Metronidazole. **7+5**
- Q.4** a) Define neutralization curve? Mention its significance. **4**
 b) Explain the neutralization curve of a strong acid when titrated against strong base. **8**
 c) Write about assay of amino acids. **3**
- Q.5.** a) Write the principle behind Mohr's method of titration. **5**
 b) Explain procedure behind estimation of chlorides by Vohlard's method. **4+6**
- Q.6** a) Define indicators? Describe the different theory of indicator. **2+8**
 b) Write in brief about iodine titration. **5**
- Q.7** a) Describe different types of EDTA titration? Explain the role of EDTA as a titrant. **5+4**
 b) How calcium can be estimated by complexometric titration? **6**
- Q.8** a) Classify errors in pharmaceutical analysis. **6**
 b) Write the steps for minimization of error in pharmacy? **9**
- Q.9** **Write notes on:-(Any three)** **5x3**
 a) Masking and demasking agents
 b) Nernst equation
 c) 0.1N Potassium permanganate
 d) Henderson hasselbach equation.
 e) Common ion effect

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B. PHARM
15PH202

2nd Semester Regular / Back Examination 2017

HAP – II

BRANCH: Pharmacy

Time: 3 Hours

Max Marks: 100

Q. CODE: Z334

**Answer Section 'A' which is compulsory and any Four from Section 'B'.
The figures in the right hand margin indicate marks.**

Section- A (Answer all the questions)

Q1 Answer the following questions: (2x10)

- a) The cerebral hemispheres are connected internally by a broad band of white matter known as the _____
- b) Hydrogen ions secreted in to gastric juice are derived from _____
- c) The kidneys are retroperitoneal because they are _____ to the peritoneum
- d) _____ hormone is responsible for increasing blood sugar in body
- e) _____ cell secretes testosterone
- f) The passway that connects the pharynx with trachea is called _____
- g) The middle zone of the adrenal cortex is called _____
- h) The crossing of axons in the optic(II) nerve is _____
- i) The passage of pancreatic juice and bile through the hepatopancreatic ampulla into the small intestine is regulated by a mass of smooth muscle, called as _____
- j) _____ is the oval central portion of the bony labyrinth.

Q2 Answer the following questions: (2x10)

- a) What is the composition of Gastric juice
- b) What are the ventricles found in human body
- c) Difference between Mydrasis and Miotic
- d) Define vital capacity
- e) Difference between Polyurea and Dysurea
- f) Write down the different types of Taste buds
- g) What is the role of Thyroxine in body
- h) What is the functions of Cranial nerves
- i) What is the functions of Parathyroid gland
- j) Mention the changes occur in ovary and uterus during follicular phase

Section B (Answer any four questions)

- Q3** a) Describe detail about the physiology of Urine formation. (10)
b) Write down the structure and functions of kidney. (5)
- Q4** a) What is respiration? Write down the anatomy of lungs and the mechanism of respiration. (10)
b) How respiration is regulated in body? (5)
- Q5** a) Write down the gross anatomy of GIT and mention the various GI secretions from them. (10)
b) Write down the summary of digestive enzymes on food during the process of digestion. (5)
- Q6** a) Describe detail about spermatogenesis in male and its hormonal control with special reference to testosterone and dihydrotestosterone. (10)
b) Physiology of menstrual cycle. (5)
- Q7** a) Write down the anatomy and physiology of Pituitary gland. (10)
b) Write a short note on adrenal gland. (5)
- Q8** a) Describe Neurohumoral transmission in CNS. (10)
b) Physiology of reflex action. (5)
- Q9** a) Draw a net labeled diagram of human eye and describe the anatomy of eye ball. (10)
b) Physiology of vision. (5)

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B.PHARM
15PH203

2nd Semester Regular / Back Examination 2016-17
PHARMACOGNOSY- I
BRANCH:

Time: 3 Hours
Max Marks: 100
Q.CODE: Z587

Answer Part-A which is compulsory and any four from Part-B.
The figures in the right hand margin indicate marks.

Part – A (Answer all the questions)

Q1 Answer the following questions: *multiple type or dash fill up type* **(2 x 10)**

- a) Tannins are nitrogenous substances (True/False)
- b) Family of Podophyllum (Berberidaceae/Burcerace)
- c) Percentage of organic matter in Poor soil (Less than 0.5%/More than 0.5%)
- d) Family of Honey (Bovidae/Apidae)
- e) Family of Castor oil (Flacourtiaceae/Euphorbiaceae)
- f) Magnesium is a secondary nutrient. (True/False)
- g) Family of Benzoin. (Rubiaceae/Styraceae)
- h) Capsicum is an Oleo-gum resin. (True/False)
- i) Stomata are present in roots. (True/False)
- j) Family of Balsam of Tolu (Liguminosae/Moraceae)

Q2 Answer the following questions: *Short answer type* **(2 x 10)**

- a) What is Soil fertility?
- b) Define Pest.
- c) Define Vein termination number.
- d) Write two functions of Auxin.
- e) Write the chemical constituents of Guar gum.
- f) What is Hybridization?
- g) Write the biological source of Kokum butter.
- h) Write the uses of Pectin.
- i) Write the biological source of Ginger.
- j) What is Vegetative Propagation?

Part – B (Answer any four questions)

- Q3** a) Write details about the history, development and scope of Pharmacognosy. (10)
b) Classify crude drugs. (5)
- Q4** a) Describe about the different types of adulterants with examples in details. (10)
b) Differentiate organized and unorganized drug. (5)
- Q5** a) Describe the detail and systematic Pharmacognostic study of Isabgol. (10)
b) Write the Biological source, Chemical constituents and Uses of Myrrh. (5)
- Q6** a) Write the Biological source, Chemical constituents and Uses of Jalap and Gambir. (10)
b) Write notes on Goldbeater's Skin test. (5)
- Q7** a) Write details about Secondary metabolites of plant origin with their properties. (10)
b) Write the Biological source, Chemical constituents and Uses of Bees wax (5)
- Q8** a) Describe any two methods of Pest control management. (10)
b) Write a note on Morphological evaluation of crude drugs. (5)
- Q9** a) Write the applications of Gibberellin and Cytokinin. (10)
b) Write a short note on Mutation. (5)

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B. PHARM
15PH204

2nd Semester Regular / Back Examination 2016-17
ORGANIC CHEMISTRY- I

Time: 3 Hours

Max Marks: 100

Q.P CODE: Z864

**Answer Section 'A' which is compulsory and any Four from Section 'B'.
The figures in the right hand margin indicate marks.**

Section A

Q1 Answer the following questions: (2x10)

- a) Which of the following hydrocarbons has the shortest C-C bond length?
1) $\text{CH}_2=\text{CH}_2$ 2) CH_3CH_3 3) C_2H_4 4) Benzene
- b) What is the hybridization of the C-atom in ethane?
1) Pure p 2) sp 3) sp^3 4) sp^2
- c) Which of the following is a nucleophile ?
1) AlCl_3 (2) H_3O^+ (3) BF_3 (4) CN^-
- d) What is the IUPAC name of the following molecule? HCOOOCH
1) Formic Anhydride . 2) Ehtanoic Anhydride
3) Methanoic Anhydride 4) None of Above
- e) The Glacial Acetic acid contain Acetic Acid
1) 90% 2) 87% 3) 99.5% 4) 96.5%
- f) The process of converting alkyl halides into alcohols involves _____?
1) addition reaction 2) substitution reaction
3) dehydrohalogenation reaction 4) rearrangement reaction
- g) Which chemical test to distinguish between the following pairs of compounds.
Methylamine and dimethylamine .
1) lucas test. 2) Hinsberg Test. 3) Dichromate Test. 4) None of the above
- h) CH_3CONH_2 can be converted into CH_3NH_2 by _____.?
1) Oxidation. 2) Ozonolysis. 3) Homolysis 4) Hofmann's Degradation
- i) What product produce through hemolytic fission
1) Carbonium Ions. 2) Carbanions 3) Free Radicals. 4) None of the above
- j) Which of the following reagents can be used to convert CH_3CHO to CH_3CONH_4 ?
1) Amonical solution of Silver Oxide 2) Pd/BaSO_4
3) Pyridinium chlorochromate. 4) $\text{Liq. NH}_3/\text{Ethanol}$

Q2 Answer the following questions: (2x10)

- a) What is Azeotropic Mixture?
- b) Write the structure of CFC?
- c) Define London Forces?
- d) What is Iodoform Reaction?
- e) Why carbon is tetravalent?
- f) What is Rosenmund Reduction?

- g) Why alpha hydrogen atoms of aldehyde are acidic?
 h) What is the difference between Gem-Vic Dihalide?
 i) Why Primary alkyl amine is more Basic than Ammonia?
 j) Write the two Structures having active methylene group?

Section B (Answer any four)

- Q3 a)** Write five general methods of preparations of alkenes and explain their Chemical properties. **(10)**
b) Discuss Bayer's strain theory with suitable examples. **(5)**
Q4 a) Discuss Inductive and Mesomeric effect with suitable examples. **(10)**
b) Define and classify different types of hydrogen bond. **(5)**
Q5 a) Discuss the mechanism of SN_1 and SN_2 reaction with suitable example. **(10)**
b) Write notes on Bohr's atomic Structure. **(5)**
Q6 a) Write synthetic applications of Diethyl Malonate. **(10)**
b) Explain Aldol Condensation & Cannizzaro reaction? **(5)**
Q7 a) Outline the general methods of preparation & Chemical Reaction of alcohol. **(10)**
b) How to differentiate primary, secondary and tertiary alcohols. **(5)**
Q8 a) What is Diels alder's reaction, Wurtz reaction and Free-radical Substitution reaction? Explain Markovnikove rule with suitable examples. **(10)**
b) Outline the general methods of preparation of Ether. **(5)**
Q9 a) Write a note on: Quantum number. **(10)**
b) Explain the conformational analysis of cyclohexane. **(5)**

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B.PHARM
15PH205

2nd Semester Regular / Back Examination 2016-17
BUSINESS COMMUNICATION IN ENGLISH

BRANCH: Pharmacy

Time: 3 Hours

Max Marks: 100

Q.CODE: Z925

Answer Part-A which is compulsory and any four from Part-B.
The figures in the right hand margin indicate marks.

Part – A (Answer all the questions)

Q1 Answer the following questions: **multiple type or dash fill up type** **(2 x 10)**

- a) A negative idea or belief which is commonly held by the members of one group of people about people belonging to a different group is known as _____.
- b) _____ is cheaper and faster than writing a letter.
- c) _____ highlights qualifications, skills, achievements and strengths that most closely meet the job description.
- d) An advertisement for a new product is an example of _____ message.
- e) Brief and written notes addressed to individuals or groups of the same organisation as routine correspondence are known as _____.
- f) A set of skills which is done with human emotions is referred to as _____.
- g) _____ is a group of people working closely together to achieve a common goal.
- h) The meanings of unfamiliar words are guessed by using _____.
- i) The free flow and exchange of information, vertically as well as horizontally, in an organisation refers to _____ communication.
- j) _____ report analyses as well as presents factual information, along with comments, suggestions, recommendations etc.

Q2 Answer the following questions: **Short answer type** **(2 x 10)**

- a) What is Ethno-centricity?
- b) Distinguish between Cc and Bcc.
- c) What is Grapevine?
- d) Write the Bias freelanguage of- i) man-to-man defence, ii) middle man.
- e) Write any two examples of Formal-external channels of communication.
- f) What is Cohesion?
- g) What do you mean by Scanning in reading process?
- h) What is Lateral communication?
- i) What are the attributes of Leadership?
- j) What do you mean by Delegation?

Part – B (Answer any four questions)

- Q3** a) Imagine that you are the Regional Marketing Manager of a pharmaceutical company, Alchem India Ltd, Regional Office (East) situated in Kolkata. Draft a memo to your sales people to join an Annual review and planning meeting. (10)
- b) Distinguish between Electronic and Paper-based communication. (5)
- Q4** a) You have invented a new kind of medicinal molecule, extracted from herb, for the treatment of any tumour. Trials have been successfully completed and you want to sell your patent that you have had recently, to an established pharmaceutical company. Write a letter to the CEO of the company. (10)
- b) Solicited proposals are sometimes called Expressions of Interest. Discuss. (5)
- Q5** a) "Good leaders are made, not born." Justify your answer. (10)
- b) What is Progression? (5)
- Q6** a) Differentiate between a Speech and a Presentation. (10)
- b) "Writing is Context-independent". Justify. (5)
- Q7** a) A good presentation, which is inevitable to your profession, must have a clear and realistic purpose. Justify. (10)
- b) Nowadays, Informal-internal channel of communication is developed by business organisations. Discuss with example. (5)
- Q8** a) Read the information provided below and Prepare a CV as per the format you have already been taught. (10)
- You are a candidate who is applying for the position of Research Fellow to a pharmaceutical Company for R & D Division as fresher. You are 24 years old. You are presently residing in House No. 123 at A.N. Guha Lane, Church Chowk, Berhampur. You have got your Post Graduate and Bachelor Degree in Pharmacy from GCP College of Pharmacy, Rourkela which is under BPUT, Odisha in the year of 2016 and 2014 respectively; after passed the +2 Science Examination from Khalikote College, Khalikote in 2010. You are enthusiastic, hardworking, imaginative, innovative etc. You have also knowledge on chemical molecule extraction from herbs and on computer operation. You are more interested in reading scientific books, travelling.
- b) What is Idea-mapping? (5)
- Q9** a) What is Decision-making? What are the different types of Decision-making processes required for team functioning? (10)
- b) What is Coherence? Explain with example. (5)

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B.PHARM
15PH206

2nd Semester Regular / Back Examination 2016-17
HOSPITAL AND COMMUNITY PHARMACY
BRANCH: B.Pharmacy
Time: 3 Hours
Max Marks: 100
Q.CODE: Z713

**Answer Section 'A' which is compulsory and any Four from Section 'B'.
The figures in the right hand margin indicate marks.**

SECTION- A

Q1 Answer the following questions: (2 x 10)

- a) Full form of HEPA is _____.
- b) _____ method is used for distribution of Charged floor stock drugs.
- c) _____ is used for Moist heat sterilization.
- d) In inventory control EOQ stands for _____.
- e) Objectives of PTC are _____ and _____.
- f) Terminal method of family planning are _____ and _____.
- g) Large volume paranterals contains preservatives. **True / False**
- h) Large Hospital have _____ numbers of beds.
- i) Gaseous sterilization is done by using _____ gas.
- j) Objectives of PTC are _____ and _____.

Q2 a) Master formula card. (2 x 10)

- b) What do you mean by buffer stock?
- c) Mention three materials which are sterilized by Autoclave.
- d) Define OTC drugs.
- e) Mention the advantages of floor stock system
- f) Composition of Universal antidote.
- g) . Classify hospitals according to ownership.
- h) Composition of Infection control committee.
- i) What are surgical cotton?
- j) Mention the temperature ranges for different storage conditions.

Section: B (answer any four questions)

Q3 a) Define Hospital. Classify them and note down the functions of Hospitals. (10)

b) Write about Infection control committee. (5)

Q4 a) Define Inventory control and describe the techniques of Inventory control. (10)

b) Write in brief about retail drug store. (5)

Q5 a) Describe the Temporary methods of family planning. (10)

b) Write notes on Purchase procedure of drugs. (5)

- Q6** a) Mention the different methods of drug distribution to in-patients, describe floor stock system. (10)
b) . Write about the emergency treatment of poisoning. (5)
- Q7** a) Define sterilization. Describe the different methods of sterilization with suitable examples (10)
b) Write notes on surgical cotton and adhesive tapes (5)
- Q8** a) Describe elaborately on Pharmacy and Therapeutic committee. (10)
b) Define and write the functions of Hospital pharmacy. (5)
- Q9** a) Describe in details about Hospital formulary system. (10)
b) Write in brief about Ethics committee. (5)

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B.Pharm
PH.2.3

2nd Semester Back Examination 2016-17

HAP - II

BRANCH: Pharmacy

Time: 3 Hours

Max Marks: 70

Q.CODE: Z335

**Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.**

Q1 Answer the following questions: (2 x 10)

- a) What is peptic ulcer?
- b) Define diabetes mellitus.
- c) Nephron.
- d) Ultra-filtration.
- e) Gastrin secretion
- f) Write about human Uterus.
- g) Define action potential?
- h) Name the hormones released from adrenal cortex.
- i) Define diabetes mellitus.
- j) Difference between myelinatednon-myelinatednerve fibres.

Q2 Describe the human digestive system with a neat and labeled diagram. Write a note on digestion of food in small intestine. (5+5)

Q3 Describe the anatomy & physiology of liver. Add a note on its function. (6+4)

Q4 What is ANS? Classify ANS on the basis of chemical point of view. Draw and describe the anatomical disposition of parasympathetic nervous system (2+3+5)

Q5 Write in detail about the physiology of urine formation. (10)

Q6 Draw and describe the anatomical structure of human eye. Write a brief note on commonest types of refractory errors of the eye. **(7+3)**

Q7 Write short note on the following: (Any two) **(5X2)**

- a) Physiology of Respiration
- b) Physiology of hearing.
- c) What are the various stages of menstrual cycle?

Q8 Write short answer on any TWO: **(5 x 2)**

- a) Spermatogenesis
- b) Write a note on reflex arc.
- c) Write a note on voice box.

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B.PHARM
PH.2.5

2nd Semester Back Examination 2016-17
(Old) PHARMACEUTICAL ANALYSIS - I
BRANCH: Pharmacy

Time: 3 Hours

Max marks: 70

QUESTION CODE: Z460

Answer Q. No. 1 which is compulsory and any five from the rest.

The figures in the right hand margin indicate marks.

Q.1 Answer the following: (2 x 10)

- Write the significance of neutralization curve?
- Name four indicators used in complexometric titration.
- What is the difference between equivalence point and end point?
- Write down the conditions for volumetric analysis.
- Define Lewis acid and give two examples from it.
- Define and different between solubility product and precipitation.
- Define mixed indicator and give one example.
- Define and differentiate between acidimetric and alkalimetric titrations.
- Define and differentiate between masking and damasking.
- How you will prepare 0.1N H₃PO₄?

Q.2 Give a detail note on the different types of errors involved in pharmaceutical analysis. What are the different steps of minimization of errors? 10

Q.3 Write notes on: 5 x 2
a) Ionic product of water.
b) Hydrolysis of salts.

Q.4 a) Derive Henderson-Hasselbach equation. 6
b) Write the procedure of Preparation and Standardization of 0.1N NaOH. 4

Q.5 a) Explain the principle of Mohr's method of titration with derivation. 5
b) Give a note on preparation and standardization of 0.1N AgNO₃. 5

Q.6 a) Classify the different types of solvent used in non-aqueous titrations. 4

b) Method of preparation and standardization of 0.1N perchloric acid. 6

Q.7 a) Metal ion indicator 5

b) Preparation and standardization of 0.01M EDTA solution. 5

Q.8 Write notes on:

a) Organic precipitants 5

b) Thermo gravimetric curve. 5

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B.Pharm
PH.2.7

2nd Semester Back Examination 2016-17

PHARMACOGNOSY - II

BRANCH: Pharmacy

Time: 3 Hours

Max Marks: 70

Q.CODE: Z586

**Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.**

Q1 Answer the following questions: (2 x 10)

- a) Write the biological source of Asafoetida.
- b) Define Pharmaceutical aid.
- c) What is Tannin?
- d) Write the biological source of Caraway.
- e) Write the chemical constituents of Podophyllum.
- f) What is Enfleurage?
- g) Write two examples Oleo gum resin.
- h) Write the family of Cinnamon.
- i) Write the chemical constituents of Musk.
- j) What is Photosensitizing agents?

Q2 Define Plant allergen. Write the details classification of Plant allergens with suitable examples. (2+8)

Q3 Write the Biological source, Chemical constituents and Uses of following drugs

- a) Myrrh (5)
- b) Turmeric (5)

Q4 a) Write the details classification of Tannins with suitable examples. (5)
b) Write the Biological source, Chemical constituents, Chemical test and Uses of Gambir. (5)

Q5 Define Antioxidant. Describe the role of Plant antioxidants with it's specific classification and suitable examples. **(2+8)**

Q6 Write the Biological source, Chemical constituents and Uses of following drugs

a) Dill **(5)**

b) Gaultheria **(5)**

Q7 Describe the detail and systematic Pharmacognostic study of Clove. **(10)**

Q8 Write short answer on any TWO: **(5 x 2)**

a) Goldbeater's Skin test

b) Anato

c) Silk

d) Fennel

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B.PHARM
PH.2.9

2nd Semester Back Examination 2016-17

Hospital Pharmacy

BRANCH: B.Pharmacy

Time: 3 Hours

Max Marks: 70

Q.CODE: Z714

**Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.**

- Q1 Answer the following questions: (2 x 10)**
- a) Mention the number of pharmacist required as per bed strength of a hospital.
 - b) Note the objectives of PTC.
 - c) What is EOQ?
 - d) Define Hospital Formulary system.
 - e) What is satellite Pharmacy?
 - f) Write about various types of storage conditions.
 - g) What are large volume parenteral?
 - h) Mention the advantages of Unit dose dispensing
 - i) What do you mean by ambulatory patient?
 - j) Mention the abilities required of a hospital pharmacist.
- Q2 a) Define Drug Information centre. Describe different sources of information. (5)**
- b) Define and classify Hospital. (5)**
- Q3 a) Define and describe the functions of Hospital pharmacy. (5)**
- b) Describe the contents of Formulary. (5)**
- Q4 Mention different methods of drug distribution to inpatients. Describe the Floor stock system of drug distribution. (10)**
- Q5 a) Define PTC. Describe its function, composition and role. (5)**
- b) Write notes on Unit dose dispensing system of drug distribution. (5)**
- Q6 a) Mention the different methods of sterilizations with suitable example of materials sterilized by using them. (5)**
- b) Describe the method of moist heat sterilization. (5)**
- Q7 a) Write notes on Inventory control. (5)**
- b) Purchase procedure of drugs. (5)**
- Q8 Write short notes on any two: (5 x 2)**
- a) Pyrogen test
 - b) Functions of Central sterile supply department
 - c) Responsibilities of Hospital Pharmacist
 - d) Surures
 - e) Patient medication profile

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B.Pharm
PH.2.10

2nd Semester Back Examination 2016-17
PHARM CHEMISTRY - II (ORG.CHEM-I)

BRANCH: Pharmacy

Time: 3 Hours

Max Marks: 70

Q.CODE: Z865

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 Answer the following questions: (2 x 10)

- a) Define carbocations, carbanions, carbenes and carbon free radicals.
- b) What is the Sachse-Mohr concept of strainless rings?
- c) What do you mean by free radical substitution reaction?
- d) Explain bond energy, bond length and bond angle with suitable examples.
- e) Write two different processes for preparation of amines.
- f) Explain homolytic and heterolytic bond fission with suitable examples.
- g) Define Markovnikov rule with suitable examples.
- h) Write two different processes for preparation of alkanes.
- i) Differentiate between Inductive & Electromeric effect.
- j) How you can distinguish primary, secondary and tertiary alcohol with suitable examples.

Q2 a) Discuss various postulates of Bohr's atomic structure and write its limitations. (2)

b) Write short notes on chemical bonding. (8)

Q3 a) Briefly explain Aldol condensation reaction & Cannizzaro reaction. (5)

b) Clemmensen reduction and α , β -unsaturated carbonyl compounds. (5)

Q4 Explain the method of preparation and Nucleophilic substitution reaction and elimination reactions of alcohol. (10)

Q5 What is hybridization? Discuss briefly SP^3 , SP^2 and SP hybridization in carbon with suitable examples. (10)

Q6 a) Conformational analysis of Cyclohexane (5)

b) Baeyer strain theory and its limitations (5)

Q7 Briefly explain on any two of the following (5 x 2)

a) Nucleophilic substitution reactions: SN^1 and SN^2 reactions

b) Diels alder reaction

c) Elimination reaction

Q8 Write short answer on any TWO: (5 x 2)

a) Chemical Bonding

b) Free Radicals

c) Basicity of Amines

d) Nucleophilic Substitution reaction