

## **2<sup>nd</sup> SEMESTER**

### **BUSINESS COMMUNICATION IN ENGLISH**

**PH.2.1 THEORY**

**2 hours/week**

**Objectives:**

**The objectives are to prepare the student to**

- a) Produce written communication of different forms such as paragraph, report letter etc.
- b) Make notes/ Summarize from a given passage
- c) Organize Meetings, prepare agenda, draft resolutions and write minutes
- d) Make presentations and face interviews.
- e) Document sources and prepare bibliographies.
- f) The objectives of management oral communication, improving the facility of oral Communication. Both transmission and reception in six managerial situations such as.  
(i) Information sharing (ii) Conversation (iii) interview (iv) Committee (v) Negotiation  
(vii) Presentation

#### **UNIT -I**

##### **WRITING-I**

**(7 hours)**

- 1 Paragraph writing – topic sentence, cohesion and coherence – sentence linkers (so, however etc.)
2. Preparation of a business report – writing a business proposal – format, length, structure

#### **UNIT -II**

##### **WRITING-II**

**(7 hours)**

3. Preparing notes – writing business letters and E-Mail messages
4. Documentation: References, notes and bibliographies

#### **UNIT -III**

### **WRITING-III**

**(7 hours)**

5. Writing curriculum vitae (both chronological and functional) along with an application for a job.
6. Public relations – concept and relevance-PR in a business organization-handling the media.

### **UNIT -IV**

#### **Meeting and presentation**

**(9 hours)**

7. Organizing a meeting, preparing an agenda, chairing a meeting drafting resolutions, writing minutes
8. Making an oral presentation
9. Facing an interview

#### **RECOMMENDED BOOKS:**

1. (John Sealy) Oxford Guide to Writing and Speaking English, OUP.
2. (Bovee et al) Business Communications Today Pearson Education.
3. (Rovi and Rai) Business Communication
4. (J.V.Cilanilam) More effective Communication, Saga Publications
5. (J.K.Chand and B.C. Das), A Millennium Guide to writing and Speaking English, Friends' Publishers)
6. The Chicago manual of style (Part 2 Section 15) Prentice-Hall of India
7. (Sushil Bahl) Business communication Today, Sage Publications.

## **BUSINESS COMMUNICATION IN ENGLISH**

**PH.2.2**

**PRACTICAL**

**2 hours/week**

#### **Some tasks**

1. Write a paragraph with the topic sentence "Protection of environment should not be at the cost of development". Identify the supporting details and sentence connectors.
2. Make notes from a given passage.
3. Prepare a short bibliography on the list of books prescribed in this course.
4. Write a letter complaining to a firm, which supplied defective computers.
5. Write a functional CV of your town.
6. Prepare an agenda of Mock meeting.
7. Imagine that you are chairing the meeting. How would you go about it?
8. How would you propose a vote of thanks?

9. Make an oral presentation on a new product your company has brought out/ make a seminar presentations
10. Make a checklist for preparing for an interview.
11. Hold a mock job interview.
12. Prepare the agenda for a meeting you are organizing.  
(The list is only illustrative and not exhaustive)

## HUMAN ANATOMY AND PHYSIOLOGY-II

(HAP-II)

**PH 2.3. THEORY**

**3 hours/Week**

### UNIT -I

1. **Digestive System:** Gross anatomy of the gastro-intestinal tract, functions of its different parts including those of liver, pancreas and gall bladder, various gastrointestinal secretions and their role in the absorption and digestion of food. Disorders of digestive system.
2. **Respiratory system:** Anatomy of respiratory organs & its functions, respiration mechanism & regulation of respiration, respiratory volumes & vital capacity.

### UNIT -II

3. **Central Nervous System:** Functions of different parts of brain & spinal cord. Neurohumoral transmission in the central nervous system, reflex action, electroencephalogram, specialized functions of the brain, cranial nerves & their functions.
4. **Autonomic Nervous System:** Physiology & functions of the autonomic nervous system. Mechanism of neurohumoral transmission in the A.N.S.

### UNIT -III

5. **Urinary System:** Various parts, structures and functions of the kidney and urinary tract. Physiology of urine formation and acid-base balance. Diseases of the urinary system.
6. **Reproductive System:** Male and female reproductive systems and their hormones, physiology of menstruation, coitus and fertilization. Sex differentiation, oogenesis, spermatogenesis & organogenesis. Pregnancy, its maintenance and parturition.

### UNIT -IV

7. **Endocrine System:** Basic anatomy and physiology of Pituitary, Thyroid, Parathyroid, Adrenals, Pancreas Testes and Ovary, their hormones and functions.

Diseases in hypo and hyper secretions.

**8. Sense Organs:** Basic anatomy and physiology of the eye (vision), ear (hearing and balance ), taste buds, nose (smell) and skin (superficial receptors).

**RECOMMENDED BOOKS:**

1. Anatomy and Physiology in Health and Illness by Ross and Willson (Churchill living stone)
2. Concise Medical Physiology by S.K.Choudhury
3. Guyton A C, Hall JE., Text book of Medical Physiology, W.B.Sandnders Company
4. Human Physiology, C C Chatterjee, Medical allied agency, Calcutta
5. Tortora G.J., & Anagnodokos N.P., Principles of Anatomy & Physiology

**HUMAN ANATOMY AND PHYSIOLOGY-II  
(HAP-II)**

**PH 2.4 PRACTICAL**

**3 hours/Week**

**(A minimum of 15 practicals shall be conducted)**

Study of the following systems with the help of charts and models:

1. Digestive system
2. Respiratory system
3. Central nervous system
4. Autonomic nervous system
5. Urinary system
6. Reproductive system
7. Endocrine system
8. Sense organs
9. Determination of vital capacity
10. Physiological experiments on nerve-muscle preparation
11. Microscopic study of different tissues
12. Study and preparation of permanent slides

**PHARMACEUTICAL ANALYSIS –I**

**PH 2.5**

**THEORY**

**3 hours/week**

**UNIT –I**

1. Significance of qualitative analysis in quality control, Different techniques of analysis, Preliminaries and definitions, Significance of figures. Rules for retaining significant digits. Types of errors, minimization of error, selection of sample, precision and accuracy. Fundamentals of volumetric analysis, methods of expressing concentration, primary and secondary standards.
2. **Acid Base Titration:** Acid base concepts role of solvers, Relative strength of acids and bases, Ionization, Law of mass action, Common ion effect, ionic product of water,

pH, Hydrolysis of salts, Henderson-Hasselbalch equation, Buffers solutions, Neutralization curves, Acid-base indicators, Theory of indicators, Choice of indicators, Mixed indicators, Polyamine and amino acid systems. Amino acid titration, applications in assay,  $\text{H}_3\text{PO}_4$ ,  $\text{NaOH}$ ,  $\text{CaCO}_3$  etc.

#### UNIT –II

**3. Precipitation Titrations:** Precipitation reactions, solubility product, effect of acids, temperature and solvent upon the solubility of a precipitate, Argentometric titration and titrations involving ammonium or potassium thiocyanate, mercuric nitrate and barium sulphate, Indicators, Gay-Lussac method; Mohr's method, Volhard's method and Fajan's method.

#### UNIT –III

**4. Non-aqueous titrations:** Acidimetry & Alkalimetry. Basic principles, solvents involved indicators. Typical examples of Acidic & Basic drug molecules.

**5. Complexometric titration:** Types of complexometric titrations, Metal ion indicators, Complexometric titrations involving EDTA. Typical examples of complexometric titration.

#### UNIT -IV

**6. Gravimetric Analysis:** Precipitation techniques, solubility products. The colloidal state, supersaturation, co-precipitation, post precipitation, Digestion, washing of the precipitate, Filtration, Filter papers, and crucibles, Ignition. Thermo gravimetric curves, specific examples like barium sulphate, aluminum as aluminum oxide, calcium as calcium oxalate and magnesium as magnesium pyrophosphate, organic precipitants.

#### RECOMMENDED BOOKS:

1. Vogel's Text book of Quantitative Chemical Analysis (Person Education, Singapore)
2. Garratt , The Quantitative analysis of drugs
- 3 H.H.Willard, Instrumental Methods of Analysis (CBS Publishers, Delhi)

### PHARMACEUTICAL ANALYSIS –I

PH 2.6

PRACTICAL

3 hours/week

**(A minimum of 15 experiments shall be conducted)**

1. Standardization of analytical weights and calibration of volumetric apparatus.
- 2--6. Preparation and standardization of sodium carbonate, potassium hydrogen phthalate, sodium bicarbonate, oxalic acid, arsenic trioxide.
- 7-10. Assay of boric acid, zinc oxide, ammonium carbonate and amino acids.
- 11-12. Preparation and standardization of silver nitrate and ammonium thiocyanate.
- 13-14. Titration according to Mohr's and Volhard's methods.
- 15-16. Preparation and standardization of perchloric acid and sodium methoxide and assay of one official drug under each type.
- 17-18. Preparation and standardization of EDTA solution and assay of calcium gluconate.

19. Assay of calcium by gravimetric analysis.

## PHARMACOGNOSY – II

PH 2.7 THEORY

3 hours/week

### UNIT -I

1. **Resins:** Study of Drugs Containing Resins and Resin Combination like colophony, podophyllum, jalap, cannabis, capsicum, myrrh, asafoetida, balsam of tolu, balsam of Peru, benzoin, turmeric, ginger.
2. **Tannins:** Study of tannins and tannin containing drugs like gambir, black catechu, gall and myrobalan.

### UNIT -II

3. **Volatile Oils:** General methods of extraction of volatile oils from plants, Study of biological source, chemical constituents, chemical tests and uses of volatile oils of Mentha, Lemon peel, Orange peel, Lemon grass, Citronella, Caraway, Dill, Nutmeg, Chenopodium, Valerian, Musk, Palmarosa, Gaultheria.. Detailed Pharmacognosy of Clove, Coriander, Fennel, Sandal wood, Cardamom, Cinnamon and Eucalyptus.

### UNIT -III

4. Natural allergens and photosensitizing agents.
5. Antioxidants from plant origin.

### UNIT -IV

6. **Fibres:** Study of fibres used in pharmacy such as cotton, silk, wool, nylon, glass wool, polyester and asbestos.
7. **Pharmaceutical aids:** Study of pharmaceutical aids like talc, diatomite, kaolin, bentonite, gelatin and natural colors (Turmeric, Saffron, Anato, Caramel, Cocheneal).

### RECOMMENDED BOOKS:

1. Text Book of Pharmacognosy by Kokate C K, Purohit A P, Gokhale S B (Nirali Prakashan, Pune)
2. Trease G.E. and Evans W.C., Pharmacognosy (Bailliere Tindall, Eastbourne)
3. Text Book of Pharmacognosy by T.E.Wallis.(CBS Publishers, New Delhi)
4. Tyler V.E., Brady L.R. and Robbers J.E., Pharmacognosy (Len & Febiger, Philadelphia)

## PHARMACOGNOSY – II

PH 2.8 PRACTICAL

3 hours/week

(A minimum of 15 experiments shall be conducted)

- 1-4 Identification of crude drugs mentioned in theory (at least 5)

- 6-7. Study of fibres
- 8-9. Study of pharmaceutical aids.
- 10-16. Microscopic studies of seven selected crude drugs and their powders mentioned in theory and their chemical tests.

## **HOSPITAL PHARMACY**

**PH 2.9            THEORY**

**3 hours/week**

### **UNIT-I**

1. **Organization and Structure:** Organization of a hospital and hospital pharmacy, responsibilities of a hospital pharmacist, Pharmacy and Therapeutic Committee, budget preparation and implementation.
2. **Hospital Formulary:** Contents, preparation and revision of hospital formulary.

### **UNIT-II**

3. **Drug Store Management and Inventory Control:** (a) Organization of drug store, Types of materials stocked, storage conditions. (b) Purchase and Inventory Control principles, purchase procedures, Purchase order, Procurement and stocking.
4. **Drug distribution System in Hospitals:** (a) Outpatient dispensing, methods adopted. (b) Dispensing of drugs to in-patients. Types of drug distribution systems. Changing policy, labeling.

### **UNIT-III**

5. **Central Sterile Supply Unit and their Management:** Types of materials for sterilization, packing of materials prior to sterilization, sterilization equipments, Supply of sterile materials.
6. **Manufacture of Sterile and Nonsterile Products:** Policy making of manufacturable items, demand and costing, personnel requirements, manufacturing practice, master formula card, production control, manufacturing records.
7. **Surgical Products:** Definition, Primary wound dressing, absorbents, surgical cotton, surgical gauzes, bandages, adhesive tape, protective cellulosic hemostastics, dressings, absorbable and nonabsorbable sutures, ligatures and catguts.

### **UNIT-IV**

8. **Drug Information Services:** Sources' of information on drugs, disease, treatment schedule, procurement of information, computerized services (e.g. MEDLINE), retrieval of information, medication error.

9. **Records and Reports:** Prescription filling, drug profile, patient medication profile, cases on drug interaction and adverse reactions, idiosyncratic cases etc.

**RECOMMENDED BOOKS:**

1. Hassan William E., Hospital Pharmacy (Lea & Febiger, Philadelphia)
2. Nand P., Khar R.K., Text book of Hospital & Clinical Pharmacy (Birla publication, Delhi)
3. Dandiya P.C. & Mathur M., A text book of Hospital & Clinical Pharmacy. (Vallabh Prakashan, Delhi)

**PHARMACEUTICAL CHEMISTRY –II**  
(Organic chemistry-I)

**PH. 2.10 THEORY**

**3 hours/week**

**UNIT-I**

Bohr's atomic structure, Atomic and Molecular orbital concepts, Quantum numbers, Chemical bonding: Ionic bond, Covalent bonds, Coordinate covalent bonds, Type of covalent bonds, Tetravalency of carbon, Hybridization:  $sp^3$ ,  $sp^2$ ,  $sp$ . Bond energy, Bond length, Bond angle, Electronegativity, Polarity in Covalent bonds, Hydrogen bonding.

I.U.P.A.C. Nomenclature of Organic compounds.

**UNIT-II**

**Organic Reactions and their Mechanisms:**

Reaction mechanism, Electron Displacement Effects: Inductive Effect, Mesomeric Effect, Electromeric Effect, Hyperconjugative Effect. Homolytic bond fission, Heterolytic bond fission. Structure and Stability of: Carbonium ions, Carbanion ions and Free radicals. Attacking Reagents: Electrophilic reagents, Nucleophilic reagents.

Brief Concept of Organic reactions: Substitution reactions, Addition reactions, Elimination reaction and Rearrangement reactions.

**UNIT-III**

**Alkanes:** Nomenclature, General methods of preparation, physical properties, combustion, Free radical substitution reactions (Chain reaction: halogenation.)

**Cycloalkanes:** Nomenclature, General methods of preparation, Chemical reactions, Relative stabilities: Bayer strain theory, Sachse-Mohr concept of strainless rings. Conformational analysis of cyclohexane.

**Alkenes:** Nomenclature, general methods of preparation, Electrophilic addition reactions, Markovnikov rule, Antimarkovnikov rule, Catalytic hydrogenation, Oxidation, Combustion.

Brief introduction to alkadienes, Diel's Alder reaction.

**Alkynes:** Nomenclature, general methods of preparation, Electronegativity of  $sp$ -hybridized carbon and acidity of acetylene, Substitution and Addition reactions.

**UNIT-IV**

