

# "ESIC PHARMACIST"

## Online Test Series

Online Test Series for ESIC Pharmacist Recruitment Test



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Quality Test



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# ESIC PHARMACIST

## Online Test Series

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The test series is designed for the preparation of ESIC PHARMACIST EXAM and promises to deliver its Finest in the exams.

## GENERAL INSTRUCTIONS FOR THE TEST SERIES

**TOTAL 23 TEST WILL BE CONDUCTED**

- 18** Topic Test (Specified syllabus)
- 03** Aptitude, General Awareness, General Intelligence
- 02** Mock Test (Full Length Test)

**Test will be conducted till PHARMACIST EXAM**

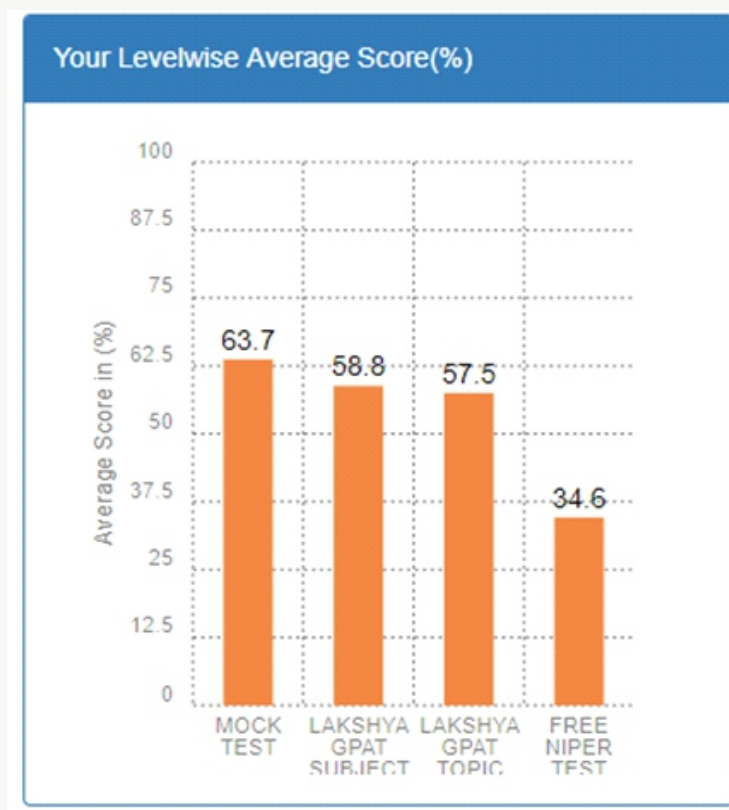
- ☞ **Pattern of the Test Series :** Multiple Choice Based Questions (MCQ) & Same as ESIC Pharmacist examination.
- ☞ **Timings for Test Series :**
  - For GK, GS and Topic wise test: 2 Hr./100 Questions
  - For Mock Test: 3 Hr./ 125 Questions
- Medium** of the Test Series will be English.
- ☞ **Day & Timings of Exam :** According to instruction
- ☞ **Announcement of results :** Rank and all detail like total number of student appear, Individual Score, Highest score done by a student by this Every candidate judge their **individual performance during online test**.
- ☞ You can see the **Answer key** after the completion of test.
- ☞ **JOIN US**
  - ✓ Make a online payment on [www.gdconlinetest.in](http://www.gdconlinetest.in) and start the test instantly as per the schedule. U can also follow the same.



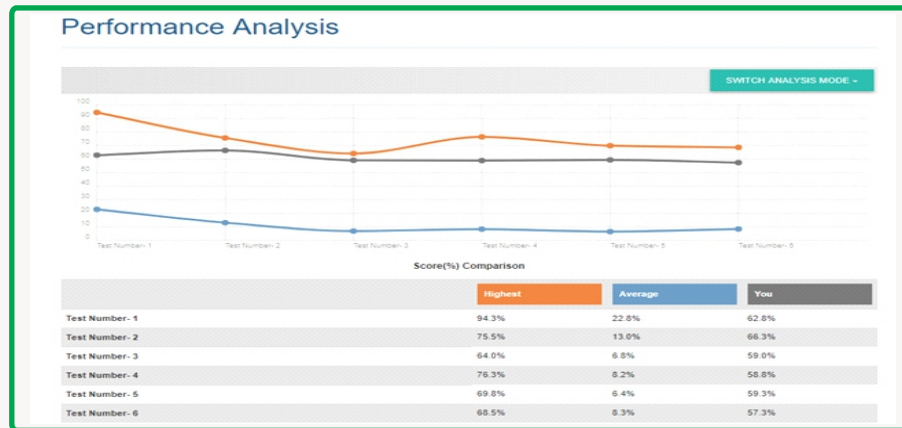
## PERFORMANCE ANALYSIS OF STUDENT WITH TOPPER'S

Students can have difficulty and topic wise analysis after finishing the exam. It gives clear picture about the strong and weak topics and student can compare their result with toppers.

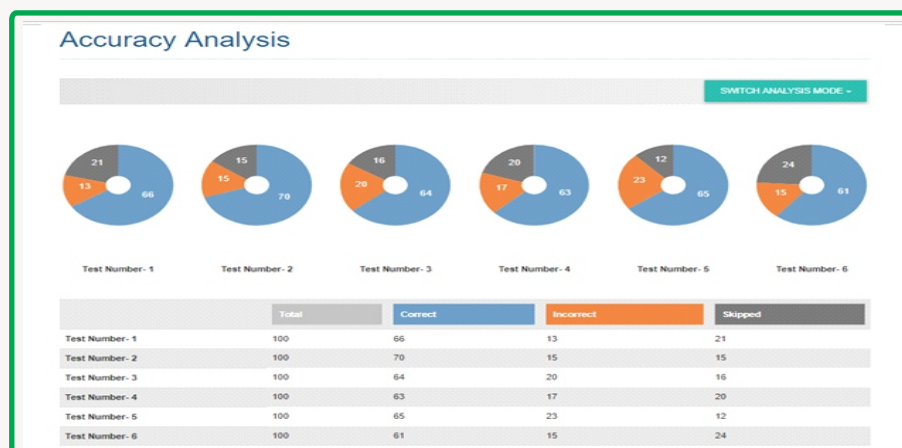
### 1. Level wise Individual Average Score



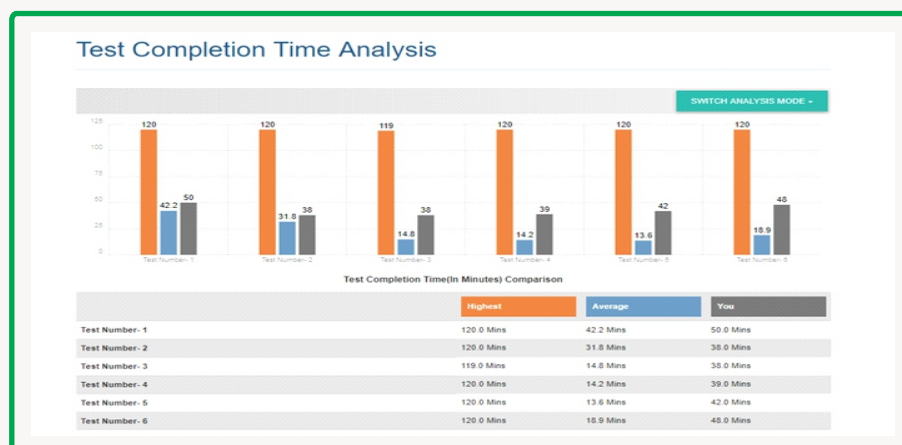
## 2. Performance analysis of student



## 3. Accuracy Analysis



## 4. Test Completion Time analysis





# TEST SERIES SYLLABUS

## Gpat Discussion Centre ESIC All India Test Series

Test	Test Type	Syllabus	NO. of Question, Marks & Time
1.	Test No. -1	Pharmaceutics -I	100 - Que., 300 - mark 120 - min
2.	Test No. -2	Pharmaceutics -II	100 - Que., 300 - mark 120 - min
3.	Test No. -3	Pharmaceutical Chemistry -I	100 - Que., 300 - mark 120 - min
4.	Test No. -4	Pharmaceutical Chemistry -II	100 - Que., 300 - mark 120 - min
5.	Test No. -5	Pharmacology and Toxicology	100 - Que., 300 - mark 120 - min
6.	Test No. -6	Pharmacology and Toxicology	100 - Que., 300 - mark 120 - min
7.	Test No. -7	Pharmacology and Toxicology	100 - Que., 300 - mark 120 - min
8.	Test No. -8	Pharmacognosy	100 - Que., 300 - mark 120 - min
9.	Test No. -9	Pharmacognosy	100 - Que., 300 - mark 120 - min
10.	Test No. -10	Pharmaceutical jurisprudence	100 - Que., 300 - mark 120 - min
11.	Test No. -11	Pharmaceutical jurisprudence	100 - Que., 300 - mark 120 - min
12.	Test No. -12	Human Anatomy and Physiology	100 - Que., 300 - mark 120 - min
13.	Test No. -13	Human Anatomy and Physiology	100 - Que., 300 - mark 120 - min
14.	Test No. -14	Biochemistry and Clinical Pathology	100 - Que., 300 - mark 120 - min
15.	Test No. -15	Biochemistry and Clinical Pathology	100 - Que., 300 - mark 120 - min
16.	Test No. -16	Health Education and Community Pharmacy	100 - Que., 300 - mark 120 - min

17.	Test No. -17	Hospital and Clinical Pharmacy	100 - Que., 300 - mark 120 - min
18.	Test No. -18	Drug Store and Business Management	100 - Que., 300 - mark 120 - min
19.	Test No. -19	Reasoning Aptitude, GK, GS	100 - Que., 300 - mark 120 - min
20.	Test No. -20	Reasoning Aptitude, GK, GS	100 - Que., 300 - mark 120 - min
21.	Test No. -21	Reasoning Aptitude, GK, GS	100 - Que., 300 - mark 120 - min
22.	Test No. -22	Full Length Test	125 - Que., 375 - mark 120 - min
23.	Test No. -23	Full Length Test	125 - Que., 375 - mark 120 - min

## EXAM PATTERN OF FINAL ESIC PHARMACIST EXAM

S.No.	Exam Type	Subjects	Questions	Marks	Exam Duration
1.	Multiple Choice Questions	Technical Knowledge	100	100	2 Hours
2.		Aptitude	25	25	
3.		General Awareness			
4.		General Intelligence			
Total			125	125	

### Aptitude, General Intelligence

- Coding-Decoding.
- Non-Verbal Series.
- Clocks & Calendars.
- Arithmetical Reasoning.
- Statements & Arguments.
- Directions.
- Decision Making.
- Data Interpretation.
- Embedded Figures.
- Cubes and Dice.
- Blood Relations.
- Statements & Conclusions.
- Number Series.
- Mirror Images.
- Alphabet Series.
- Number Ranking.
- Syllogism.
- Analogy.

# DETAIL SYLLABUS OF ESIC PHARMACIST

## PHARMACEUTICS - I

1. Introduction of different dosage forms: Their classification with their examples-their relative applications. Familiarization with new drug delivery systems.
2. Introduction to Pharmacopoeias with special reference to the Indian Pharmacopoeia.
3. Metrology: Systems of weights and measures. Calculations including conversion from one system to another system. Percentage calculations and adjustment of products. Use of alligation method in calculations. Isotonic solutions.
4. Packaging of pharmaceuticals: Desirable features of a container and types of containers. Study of glass & plastics as materials for containers and rubber as a material for closure-their merits and demerits. Introduction to aerosol packaging.
5. Size reduction: Objectives and factors affecting size reduction, methods of size reduction- study of Hammer mill, ball mill, Fluid energy mill and Disintegrator.
6. Size separation: Size separation by sifting. Official standards for powders. Sedimentation methods of size separation. Construction and working of Cyclone separator.
7. Mixing and Homogenization: Liquid mixing and powder mixing, mixing of semisolids. Study of Silverson Mixer-Homogenizer, planetary Mixer; Agitated powder mixer; Triple Roller Mill; Propeller Mixer, colloid Mill and Hand Homogeniser. Double cone mixer.
8. Clarification and Filtration: Theory of filtration, Filter media; Filter aids and selection of filters. Study of the following filtration equipments-Filter Press, sintered filters, Filter candles, Metafilter.
9. Extraction and Galenicals:
  - (a) Study of percolation and maceration and their modification, continuous hot extraction- Application in the preparation of tinctures and extracts.
  - (b) Introduction to Ayurvedic dosage forms.
10. Heat process-Evaporation-Definition-Factors affecting evaporation-study of evaporating still and Evaporating pan.
11. Distillation: Simple distillation and Fractional distillation, steam distillation and vacuum distillation. Study of vacuum still, preparation of purified water I.P. Construction and working of the still used for the same.
12. Introduction to drying process: Study of Tray Dryers; Fluidized Bed Dryer, Vacuum Dryer and Freeze Dryer.
13. Sterilization-Concept of sterilization and its differences from disinfections-Thermal resistance of microorganisms. Detailed study of the following sterilization process.
  1. Sterilization with moist heat
  2. Dry heat sterilization
  3. Sterilization by radiation
  4. Sterilization by filtration
  5. Gaseous sterilization.

Aseptic techniques: Applications of sterilization process in hospitals particularly with reference to surgical dressings and intravenous fluids. Precautions for safe and effective handling of sterilization equipment.

14. Processing of Tablets: Definition; different type of compressed tables and their properties. Processes involved in the production of tablets; Tablets excipients; Defects in tablets; Evaluation of Tablets; Physical standards including Disintegration and Dissolution. Tablet coating-sugar coating; films coating, enteric coating and micro-encapsulation (Tablet coating may be dealt in elementary manner)
15. Processing of Capsules: Hard and soft gelatin capsules; different sizes of capsules; filling of capsules; handling and storage of capsules. Special applications of capsules.[
16. Study of immunological products like sera, vaccines, toxoids & their preparations.

### PHARMACEUTICAL CHEMISTRY - I

1. General discussion on the following inorganic compounds including important physical and chemical properties, medicinal and pharmaceutical uses storage conditions and chemical incompatibility.
  - (A) Acids, bases and buffers: Boric acid, Hydrochloric acid, Strong Ammonium hydroxide, Calcium hydroxide, Sodium hydroxide and official buffers.
  - (B) Antioxidants: Hypophosphorous acid, Sulphur dioxide, Sodium bisulphate, Sodium meta bisulphite, Sodium thiosulphate, Nitrogen and Sodium nitrite.
  - (C) Gastrointestinal agents:
    1. Acidifying agents- Dilute Hydrochloric acid.
    2. Antacids- Sodium bicarbonate, Aluminum hydroxide gel, Aluminum phosphate, Calcium carbonate, Magnesium carbonate, Magnesium trisilicate, Magnesium oxide, Combinations of antacid preparations.
    3. Protective and Adsorbents- Bismuth sub carbonate and Kaolin.
    4. Saline cathartics- Sodium potassium tartrate and Magnesium sulphate.
  - (D) Topical Agents:
    1. Protective- Talc, Zinc Oxide, Calamine, Zinc stearate, Titanium dioxide, siliconopolymers.
    2. Antimicrobials and Astringents: Hydrogen peroxide\*, Potassium permanganate, Chlorinated lime, Iodine, Solutions of Iodine, Povidone-iodine, Boric acid, Borax, Silver nitrate, Mild silver protein, Mercury, yellow Mercuric oxide, Ammoniated mercury.
    3. Sulphur and its compounds- Sublimed sulphur, Percipitated sulphur, Selenium sulphide.
    4. Astringents- Alum and Zinc Sulphate.
  - (E) Dental Products: Sodium fluoride, Stannous flouride, Calcium fluoride, Calcium carbonate, Sodium meta phosphate, Di-calcium phosphate, Strontium chloride, Zinc chloride.
  - (F) Inhalants- Oxygen, Carbon dioxide, Nitrous oxide.
  - (G) Respiratory stimulants: Ammonium carbonate.
  - (H) Expectorants and Emetics: Ammonium chloride\*, Potassium iodide, Antimony potassium tartrate.
  - (I) Antidotes: Sodium nitrite.



2. Major Intra and Extra cellular electrolytes:
  - (A) Electrolytes used for replacement therapy- Sodium chloride and its preparations, Potassium chloride and its preparations.
  - (B) Physiological acid-base balance and electrolytes used- Sodium acetate, Potassium Acetate, Sodium bicarbonate Inj., Sodium citrate, Potassium citrate, Sodium lactate injection, Ammonium chloride and its injection.
  - (C) Combination of oral electrolyte powders and solutions.
3. Inorganic official compounds of Iron, Iodine and Calcium, Ferrous Sulphate and Calcium Gluconate.
4. Radio pharmaceuticals and contrast media: Radio activity-Alpha; Beta and Gamma Radiations, Biological effects of radiations, Measurement of radio activity, G.M. Counter, Radio isotopes-their uses, Storage and precautions with special reference to the official preparations. Radio opaque contrast media-Barium sulfate.
5. Quality control of Drugs and pharmaceuticals: Importance of quality control, significant errors, methods used for quality control, sources of impurities in pharmaceuticals. Limit tests for Arsenic, Chloride, Sulfate, Iron and Heavy metals.
6. Identification tests for cations and anions as per Indian Pharmacopoeia.

### PHARMACOGNOSY

1. Definition, history and scope of Pharmacogonosy including indigenous system of medicine.
2. Various systems of classification of drugs of natural origin.
3. Adulteration and drug evaluation; significance of Pharmacopoeial standards.
4. Brief outline of occurrence, distribution, outline of isolation, identification tests, therapeutic effects and pharmaceutical application of alkaloids, terpenoids, glycosides, volatile oils, tannins and resins.
5. Occurrence, distribution, organoleptic evaluation, chemical constituents including tests wherever applicable and therapeutic efficacy of following categories of drugs.
  - (a) **Laxatives:** Aloes, Rhubarb, Castor oil, Ispaghula, Senna.
  - (b) **Cardiotonics** - Digitalis, Arjuna.
  - (c) **Carminatives & G.I. regulators:** Umbelliferous fruits, Coriander, Fennel, Ajowan, Cardamom, Ginger, Black pepper, Asafoetida, Nutmeg, Cinnamon, Clove.
  - (d) **Astringents** - Catechu.
  - (e) **Drugs acting on nervous system:** Hyoscyamus, Belladonna, Aconite, Ashwagandha, Ephedra, Opium, Cannabis, Nux -vomica.
  - (f) **Antihypertensive** - Rauwolfia.
  - (g) **Antitussives** - Vasaka, Tolu balsam, Tulsi.
  - (h) **Antirheumatics** - Guggal, Colchicum.
  - (i) **Antitumour** - Vinca.
  - (j) **Antileprotics** - Chaulmoogra oil.
  - (k) **Antidiabetics** - Pterocarpus, Gymnema sylvestro.
  - (l) **Diuretics** - Gokhru, Punarnava.
  - (m) **Antidysenterics**- Ipecacuanha.

- (n) **Antiseptics and disinfectants**- Benzoin, Myrrh, Neem, Curcuma.
  - (o) **Antimalarials**- Cinchona.
  - (p) **Oxytocics**- Ergot.
  - (q) **Vitamins**- Shark liver oil and Amla.
  - (r) **Enzymes**- Papaya, Diastase, Yeast.
  - (s) **Perfumes and flavoring agents**- peppermint oil, Lemon oil, Orange oil, lemon grass oil, sandal wood.
  - (t) **Pharmaceutical aids**-Honey, Arachis oil, starch, kaolin, pectin, olive oil. Lanolin, Beeswax, Acacia, Tragacanth, sodium Alginate, Agar, Guar gum, Gelatin.
  - (u) **Miscellaneous**: Liquorice, Garlic, picrorhiza, Dioscorea, Linseed, shatavari, shankhpashpi, pyrethrum, Tobacco.
6. Collection and preparation of crude drugs for the market as exemplified by ergot, opium, rauwolfia, digitalis and senna.
  7. Study of source, preparation and identification of fibers used in sutures and surgical dressings cotton, silk, wool and regenerated fibers.
  8. Gross anatomical studies of Senna, Datura, Cinnamon, Cinchona, Coriander, Fennel, Clove, Ginger, Nux-vomica, Ipecacuanha.

## BIOCHEMISTRY AND CLINICAL PATHOLOGY

1. **Introduction to Biochemistry.**
2. Brief chemistry and role of proteins, polypeptides and amino acids, classification, Qualitative tests, Biological value, Deficiency diseases.
3. Brief chemistry and role of carbohydrates, classification, qualitative tests, Diseases related to carbohydrate metabolism.
4. Brief chemistry and role of lipids, classification and qualitative tests. Diseases related to lipids metabolism.
5. Brief chemistry and role of vitamins and coenzymes
6. Role of minerals and water in life processes.
7. **Enzymes**: Brief concept of enzymatic action factors affecting it. Therapeutic and pharmaceutical importance.
8. Brief concept of normal and abnormal metabolism of proteins, carbohydrate and lipids.
9. Introduction to pathology of blood and urine
  - (a) Lymphocytes and platelets, their role in health and disease
  - (b) Erythrocytes-Abnormal cells and their significance
  - (c) Abnormal constituents of urine and their significance in diseases.

## HUMAN ANATOMY AND PHYSIOLOGY

1. **Scope of Anatomy and physiology:** Definition of various terms used in Anatomy.
2. Structure of cell, function of its components with special reference to mitochondria and microsomes.
3. **Elementary Tissues:** Elementary tissues of the body, i.e. epithelial tissue, muscular tissue, connective tissue and nervous tissue.
4. Structure and function of Skelton. Classification of joints and their function. Joint disorders.
5. Composition of blood, functions of blood elements. Blood group and coagulation of blood. Brief information regarding disorders of blood.
6. Name and functions of lymph glands.
7. Structure and functions of various parts of the heart. Arterial and venous system with special reference to the names and positions of main arteries and veins. Blood pressure and its recording. Brief information about cardiovascular disorders.
8. Various parts of respiratory system and their functions, physiology of respiration.
9. Various parts of urinary system and their functions, structure and functions of kidney. Physiology of urine formation. Patho-physiology of renal diseases and edema.
10. Structure of skeletal muscle, physiology of muscle contraction. Names, positions, attachments and functions of various skeletal muscles. Physiology of neuromuscular junction.
11. Various parts of central nervous system, brain and its parts, functions and reflex action. Anatomy and physiology of autonomic nervous system.
12. Elementary knowledge of structure and functions of the organs of taste, smell, ear, eye and skin. Physiology of pain.
13. Digestive system:-Names of various parts of digestive system and their functions. structure and functions of liver, physiology of digestion and absorption.
14. Endocrine glands and Hormones. Location of glands, their hormones and functions.
15. Reproductive System: Physiology and Anatomy of Reproductive system.

## HEALTH EDUCATION AND COMMUNITY PHARMACY

1. **Concept of health:** Definition of physical health, mental health, social health, spiritual health determinants of health, indicators of health, concept of disease, natural history of diseases, the disease agents, concept of prevention of diseases.
2. **Nutrition and health:** Classification of foods, requirements, diseases induced due to deficiency of proteins, vitamins and minerals-treatment and prevention.
3. **Demography and family planning:** Demography cycle, fertility, family planning, contraceptive methods, behavioral methods, hormonal contraceptives, population problem of India.
4. **First aid:** Emergency treatment in shock, snake-bite, burns, poisoning, heart disease, fractures and resuscitation methods, Elements of minor surgery and dressings.
5. **Environment and health:** Source of water supply, water pollution, purification of water, health and air, noise, light-solid waste disposal and control-medical entomology, arthropod borne diseases and their control, rodents, animals and diseases.

6. **Fundamental principles of microbiology:** Classification of microbes, isolation, staining techniques of organisms and prevention.
7. **Communicable diseases:** Causative agents, mode of transmission and prevention.
  - (a) **Respiratory infections**-chicken pox, measles, influenza, diphtheria, whooping cough and tuberculosis.
  - (b) **Intestinal infection:** poliomyelitis, Hepatitis, cholera, Typhoid, food poisoning, Hookworm infection.
  - (c) **Arthropod borne infections:** plague, Malaria, filariases.
  - (d) **Surface infection:** Rabies, Trachoma, Tetanus, Leprosy.
  - (e) **Sexually transmitted diseases:** Syphilis, Gonorrhoea, AIDS.
8. **Non-communicable diseases:** Causative agents, prevention, care and control: Cancer, Diabetes, Blindness, Cardiovascular disease.
9. **Epidemiology:** Its scope, methods, uses, dynamics of disease transmission. Immunity and immunization: Immunological products and their dose schedule. Principles of disease control and prevention, hospital acquired infection, prevention and control. Disinfection, types of disinfection procedures, for-faces, urine, sputum, room linen, dead-bodies, instruments.

## PHARMACEUTICS-II

1. **Dispensing Pharmacy:**
  - (I)**Prescriptions:** Reading and understanding of prescriptions; Latin terms commonly used (Detailed study is not necessary), Modern methods of prescribing, adoption of metric system. Calculations involved in dispensing.
  - (II) **Incompatibilities in prescriptions:** study of various types of incompatibilities-physical, chemical and therapeutic.
  - (III) **Posology:** Dose and dosage of drugs, factors influencing dose, calculations of doses on the basis of age, sex, surface area and veterinary doses.
2. **Dispensed Medications:** (Note: A detailed study of the following dispensed medication is necessary. Methods of preparation with theoretical and practical aspects, use of appropriate containers and closures. Special labeling requirements and storage conditions should be high-lighted).
  - (I)**Powders:** Type of powders-Advantages and disadvantages of powders, Granules, cachets and tablet triturates. Preparation of different types of powders encountered in prescriptions. Weighing methods, possible errors in weighing, minimum weighable amounts and weighing of a material below the minimum weighable amount, geometric dilution and proper usage and care of dispensing balance.
  - (II) **Liquid oral Dosage forms:**
    - a. **Monophasic** - Theoretical aspects including commonly used vehicles, essential adjuvant like stabilizers, colorants and flavors, with examples.  
Review of the following monophasic liquids with details of formulation and practical methods.
    - b. **Biphasic Liquid Dosage Forms:**
      - i. **Suspensions:** (elementary study) Suspensions containing diffusible solids and liquids and their preparations. Study of the adjuvant used like thickening agents, wetting agents,

their necessity and quantity to be incorporated, suspensions of precipitate forming liquids like tinctures, their preparations and stability. suspensions produced by chemical reaction. An introduction to flocculated /non-flocculated suspension system.

**ii. Emulsions:** Types of emulsions, identification of emulsion system, formulation of emulsions, selection of emulsifying agent. Instabilities in emulsions, preservation of emulsions.

**c. Semi-Solid Dosage Forms:**

**i. Ointments:** Types of ointments, classification and selection of dermatological vehicles.

Preparation and stability of ointments by the following processes:

- (a) Trituration
- (b) Fusion
- (c) Chemical reaction
- (d) Emulsification.

**ii. Pastes:** Differences between ointments and pastes, Bases of pastes. Preparation of pastes and their preservation.

**iii. Jellies:** An introduction to the different types of jellies and their preparation.

**iv.** An elementary study of poultice.

**v. Suppositories and passaries:** Their relative merits and demerits, types of suppositories, suppository bases, classification, properties. preparation and packing of suppositories. Use of suppositories of drug absorption.

**3. Dental and cosmetic preparations:** Introduction to Dentifrices, facial cosmetics, Deodorants. Anti perspirants, shampoo, Hair dressings and Hair removers.

**4. Sterile Dosage forms:**

**a. Parenteral dosage forms-**Definition, General requirements for parenteral dosage forms. Types of parenteral formulations, vehicles, adjuvant, processing and personnel, Facilities and quality control. Preparation of Intravenous fluids and admixtures-Total parenteral nutrition, Dialysis fluids.

**b. Sterility testing:** particulate matter monitoring- Faculty seal packaging.

**c. Ophthalmic products:** study of essential characteristics of different ophthalmic preparations. Formulation: additives, special precautions in handling and storage of ophthalmic products.

**PHARMACEUTICAL CHEMISTRY-II**

1. Introduction to the nomenclature of organic chemical systems with particular reference to hetero-cyclic system containing up to 3 rings.
2. The chemistry of following pharmaceutical organic compounds covering their nomenclature, chemical structure, uses and the important physical and chemical properties(chemical structure of only those compounds marked with asterisk (\*). The stability and storage conditions and the different type of pharmaceutical formulations of these drugs and their popular brand names:

**(1) Antiseptics and Disinfectants:** Proflavine\*, Benzalkonium chloride, Cetrimide, Chlorocresol, chloroxylenol, Formaldehyde solution, Hexachlophene, Liquefied phenol, Nitrofurantoin.



- (2) **Sulphonamides:** Sulphathiazole, Succinylsulphathiazole, Sulphadimethoxine, sulphamethoxy pyrdazine, sulpjamethoxazole, Co-trimoxazole, sulfacetamide\*
- (3) **Antileprotic Drugs:** Clofazimine , Thiambutosine, Dapsone\*, solapsone.
- (4) **Anti-tubercular Drugs:** Isoniazid\*, PAS\*, Streptomycin, Rifampicin, Ethambutol\*, Thiacetazone, Ethionamide, cycloserine, pyrazinamide\*.
- (5) **Antimoebic and Anthelmintic Drugs:** Emetine, Metronidazole, Halogenated hydroxyquinolines, Diloxanide furoate, Paromomycin , Piperazine\*, Mebendazole, D.E.C.\*
- (6) **Antibiotics:** Benzyl penicillin\*, Phenoxy methyl penicillin\*, Benzathine penicillin, Ampicillin\*, Cloxacillin, Carbencicillin, Gentamicin, Neomycin, Erythromycin, Tetracycline, Cephalexin, Cephaloridine, Cephalothin, Griseofulvin, Chloramphenicol.
- (7) **Antifungal agents:** Udecylenic acid, Tolnaftate, Nystatin, Amphotericin, Hamycin.
- (8) **Antimalarial Drugs:** Chloroquine\*,Amodiaquine, Primaquine, Proguanil, Pyrimethamine\*, Quinine, Trimethoprim.
- (9) **Tranquilizers:** Chlorpromazine\*, Prochlorperazine, Trifluoperazine, Thiothixene, Haloperidol\*, Triperiodol, Oxypertine, Chlordizepoxide, Diazepam\*, Lorazepam, Meprobamate.
- (10) **Hypnotics:** Phenobarbitone\*, Methyprylon, Paraldehyde, Triclofosodium.
- (11) **General Anaesthetics:** Halothane\*, Cyclopropane\*, Diethyl ether\*, Methohexital sodium, Thiopental sodium, Trichloroethylene
- (12) **Antidepressant Drugs:** Amitriptyline, Nortriptyline, Imperamine\*, Phepelzine,Tranlylcypromine.
- (13) **Analeptics:** Theophylline, Caffeine\*, Coramine\*, Dextro-amphetamine.
- (14) **Adrenergic drugs:** Adrenaline\*, Noradrenaline, Isoprenaline\*, Phenylephrine, Salbutamol, Terbutaline, Ephedrine\*, Pseudoephedrine.
- (15) **Adrenergic antagonist:** Tolazoline, Propranolol\*, Practolol.
- (16) **Cholinergic Drugs:** Neostigmine\*, Pyridostigmine, Pralidoxime, Pilocarpine, Physostigmine\*.
- (17) **Cholinergic Antagonists:** Atropine\*, Hyoscine, Homatropine, Propantheline\*, Benztropine, Tropicamide, Biperiden\*.
- (18) **Diuretic Drugs:** Furosemide\*, Chlorothiazide, Hydrochlorothiazide\*, Benzthiazide, Urea\*, Mannitol\*, Ethacrynic Acid.
- (19) **Cardiovascular Drugs:** Ethylnitrite\*, Glyceryl trinitrate, Alpha methyldopa, Guanethidine, Clofibrate, Quinidine.
- (20) **Hypoglycemic Agents:** Insulin, Chlorpropamide\*, Tolbutamide, Glibenclamide, Phenformin\*, Metformin.
- (21) **Coagulants and Anti coagulants:** Heparin, Thrombin, Menadione\*, Bisphydroxy-coumarin, Warfarin sodium.[3 h]
- (22) **Local Anaesthetics:** Lignocaine\*, Procaine\*, Benzocaine.
- (23) **Histamine and anti Histaminic Agents:** Histamine, Diphenhydramine\*, Promethazine, Cyproheptadine, Mepyramine\*, Pheniramine, Chlorpheniramine\*.
- (24) **Non-steriodal anti-inflammatory agents:** Indomethacin\*, Phenylbutazone\*, Oxyphenbutazone, Ibuprofen.

- (25) **Thyroxine and Antithyroids:** Thyroxine\*, Methimazole, Methyl thiouracil, Propylthiouracil.
- (26) **Diagnostic Agents:** Lopanoic Acid, Propyliodone, Sulfobromophthalein-sodium, Indigotindisulfonate, Indigo Carmine, Evans blue, Congo Red, Fluorescein sodium.
- (27) **Anticonvulsants, cardiac glycosides, Antiarrhythmic, Antihypertensives & Vitamins.**
- (28) **Steroidal Drugs:** Betamethasone, Cortisone, Hydrocortisone, Prednisolone, Progesterone, Testosterone, Oestradiol, Nandrolone.
- (29) **Anti-Neoplastic Drugs:** Actinomycin, Azathioprine, Busulphan, Chloramubucil, Cisplatin, Cyclophosphamide, Daunorubicin Hydrochloride, Fluorouracil, Mercaptopurine, Methotrexate, Mytomycin.

## PHARMACOLOGY & TOXICOLOGY

1. **Introduction** to pharmacology, scope of pharmacology.
2. **Routes of administration of drugs**, their advantages and disadvantages. Various processes of absorption of drugs and the factors affecting them. Metabolism, distribution and excretion of drugs.
3. **General mechanism of drugs action** and their factors which modify drugs action.
4. Pharmacological classification of drugs. The discussion of drugs should emphasize the following aspects:
  - (i) **Drugs acting on the central Nervous system:**
    - a. General anaesthetics- adjunction to anaesthesia, intravenous anaesthetics.
    - b. Analgesic antipyretics and non-steroidal anti-inflammatory drugs- Narcotic analgesics, Antirheumatic and anti-gout remedies, Sedatives and Hypnotics, psychopharmacological agents, anticonvulsants, analeptics.
    - c. Centrally acting muscle relaxants and anti parkinsonism agents.
  - (ii) Local anesthetics.
  - (iii) **Drugs acting on autonomic nervous system.**
    - a. Cholinergic drugs, Anticholinergic drugs, anticholinesterase drugs.
    - b. Adrenergic drugs and adrenergic receptor blockers.
    - c. Neurone blockers and ganglion blockers.
    - d. Neuromuscular blockers, used in myasthenia gravis.
  - (iv) **Drugs acting on eye:** Mydriatics, drugs used in glaucoma.
  - (v) **Drugs acting on respiratory system:** Respiratory stimulants, Bronchodilators, Nasal decongestants, Expectorants and Antitussive agents.
  - (vi) **Antacids:** Physiological role of histamine and serotonin, Histamine and Antihistamines, prostaglandins.
  - (vii) **Cardio vascular drugs:** Cardiotonics, Antiarrhythmic agents, Anti-anginal agents, Antihypertensive agents, peripheral Vasodilators and drugs used in atherosclerosis.
  - (viii) **Drugs acting on the blood and blood forming organs.** Haematinics, coagulants and anticoagulants, Haemostatic, Blood substitutes and plasma expanders.
  - (ix) **Drugs affecting renal function:** Diuretics and anti-diuretics.

- (x) **Hormones and hormone antagonists-** Hypoglycemic agents, Anti—thyroid drugs, sex hormones and oral contraceptives, corticosteroids.
- (xi) **Drugs acting on digestive system:** Carminatives digest ants, Bitters, Antacids and drugs used in peptic ulcer, purgatives, and laxatives, Antidiarrhoeals, Emetics, Anti-emetics, and Antispasmodics.
- (xii) **Chemotherapy of microbial diseases:** Urinary antiseptics, sulphonamides, penicillin, streptomycin, Tetracyclines and other antibiotics. Anti-tubercular agents, Antifungal agents, antiviral drugs, anti-leprotic drugs.
- (xiii) **Chemotherapy of protozoal diseases:** Anthelmintic drugs.
- (xiv) **Chemotherapy of cancer.**
- (xv) **Disinfectants and antiseptics.**

**Note:** A detailed study of the action of drugs on each organ is not necessary.

## PHARMACEUTICAL JURISPRUDENCE

1. **Origin and nature of pharmaceutical legislation in India.** Its scope and objectives. Evolution of the “Concept of pharmacy” as an integral part of the Health care system.
2. **Principles and significance of professional Ethics.** Critical study of the code of pharmaceutical Ethics drafted by pharmacy council of India.
3. **Pharmacy Act, 1948-**The General study of the pharmacy Act with special reference to Education Regulations, Working of state and central councils, constitution of these councils and functions, Registration procedures under the Act.
4. **The Drugs and Cosmetics Act, 1940-**General study of the Drugs and cosmetics Act and the Rules there under. Definitions and salient features related to retail and whole sale distribution of drugs. The powers of Inspectors, the sampling procedures and the procedure and formalities in obtaining licenses under the rule. Facilities to be provided for running a pharmacy effectively. General study of the schedules with special reference to schedules C, C-1, F, G, J, H, P and X and salient features of labeling and storage conditions of drugs.
5. **The Drugs and Magic Remedies (objectionable Advertisement) Act, 1954-**General study of the Act, objectives, special reference to be laid on Advertisements, magic remedies and objections and permitted advertisements -diseases which cannot be claimed to be cured.
6. **Narcotic Drugs and psychotropic substances Act, 1985-** A brief study of the act with special reference to its objectives, offences and punishment.
7. **Brief introduction to the study of the following acts:**
  - (1) Latest Drugs (price control) order in force.
  - (2) Poisons Act 1919(as amended to date)
  - (3) Medicinal and Toilet preparations (excise Duties) Act, 1955 (as amended to date)
  - (4) Medical Termination of Pregnancy Act, 1971(as amended to date)

## DRUG STORE AND BUSINESS MANAGEMENT

1. **Introduction**-Trade, Industry and commerce, Functions and subdivision of commerce, Introduction to Elements for Economics and Management.
2. Forms of Business Organizations
3. Channels of Distribution.
4. **Drug House Management**-selection of site, space Lay-out and legal requirements. Importance and objectives of purchasing, selection of suppliers, credit information, tenders, contracts and price determination and legal requirements thereto. Codification, handling of drug stores and other hospital supplies.
5. Inventory Control-objects and importance, modern techniques like ABC,VED analysis, the lead time, inventory carrying cost, safety stock, minimum and maximum stock levels, economic order quantity, scrap and surplus disposal.
6. **Sales** promotion, Market Research, Salesmanship, qualities of a salesman, Advertising and Window Display.
7. **Banking and Finance**-Service and functions of bank, Finance planning and sources of finance.
8. **Introduction to the accounting** concepts and conventions. Double entry Book Keeping, Different kinds of accounts.
9. Cash Book.
10. General Ledger and Trial Balance.
11. Profit and Loss Account and Balance Sheet.
12. Simple techniques of analyzing financial statements. Introduction to Budgeting.

## HOSPITAL AND CLINICAL PHARMACY

### PART-I : HOSPITAL PHARMACY

1. **Hospital**-Definition, Function, classifications based on various criteria, organization, Management and health delivery system in India.
2. **Hospital Pharmacy:**
  - a. Definition
  - b. Functions and objectives of Hospital pharmaceutical services.
  - c. Location, Layout, Flow chart of materials and men.
  - d. Personnel and facilities requirements including equipments based on individual and basic needs.
  - e. Requirements and abilities required for Hospital pharmacists.
3. **Drug Distribution system in Hospitals:**
  - a. Out-patient service
  - b. In-patient services- Types of services detailed discussion of unit Dose system, Floor ward stock system, satellite pharmacy services, central sterile services, Bed side pharmacy.

#### 4. **Manufacturing:**

- a. Economical considerations, estimation of demand.
- b. **Sterile manufacture**-Large and small volume parenterals, facilities, requirements, layout production planning, man-power requirements.
- c. **Non-sterile manufacture**-Liquid orals, externals, Bulk concentrates.
- d. Procurement of stores and testing of raw materials.
- e. Nomenclature and uses of surgical instruments and Hospital Equipments and health accessories.

#### 5. **P.T.C.(Pharmacy Therapeutic Committee)**

#### 6. **Hospital Formulary system** and their organization, functioning, composition.

#### 7. **Drug Information service** and Drug Information Bulletin.

#### 8. **Surgical dressing** like cotton, gauze, bandages and adhesive tapes including their pharmacopoeial tests for quality. Other hospital supply eg. I.V.sets, B.G. sets, Ryals tubes, Catheters, Syringes, etc.

#### 9. **Application of computers** in maintenance of records, inventory control, medication monitoring, drug information and data storage and retrieval in hospital retail pharmacy establishment.

### PART II : CLINICAL PHARMACY

#### 10. **Introduction to Clinical pharmacy practice:** Definition, scope.

#### 11. **Modern dispensing aspects-** Pharmacists and patient counseling and advice for the use of common drugs, medication history.

#### 12. **Common daily terminology used in the practice of Medicine.**

#### 13. **Disease, manifestation and Patho-physiology** including salient symptoms to understand the disease

like Tuberculosis, Hepatitis, Rheumatoid Arthritis, Cardio-vascular diseases, Epilepsy, Diabetes, Peptic Ulcer, Hypertension.

#### 14. **Physiological parameters with their significance.**

#### 15. **Drug Interactions:**

- a. Definition and introduction.
- b. Mechanism of Drug Interaction.
- c. Drug-drug interaction with reference to analgesics, diuretics, cardiovascular drugs, Gastro intestinal agents. Vitamins and Hypoglycemic agents.
- d. Drug-food interaction.

#### 16. **Adverse Drug Reaction:**

- a. Definition and significance.
- b. Drug-Induced diseases and Teratogenicity.

#### 17. **Drugs in Clinical Toxicity:** Introduction, general treatment of poisoning, systemic antidotes, Treatment of insecticide poisoning, heavy metal poison, Narcotic drugs, Barbiturate, Organo phosphorus poisons.

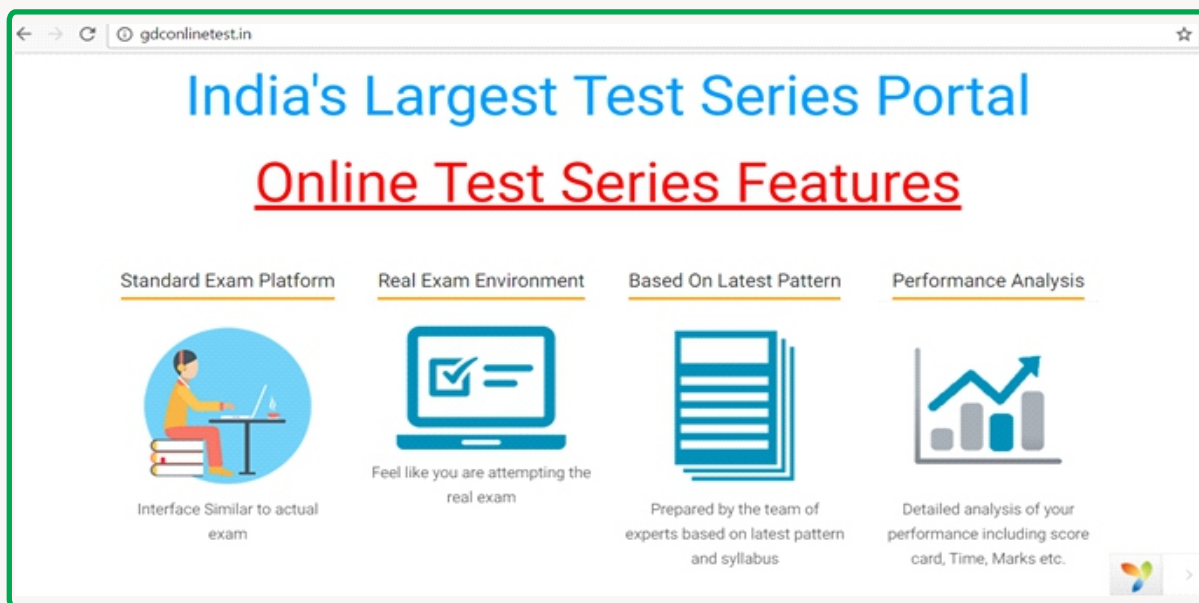
#### 18. **Drug dependences**, drug abuse, addictive drugs and their treatment, complications.

#### 19. **Bio-availability of drugs**, including factors affecting it.

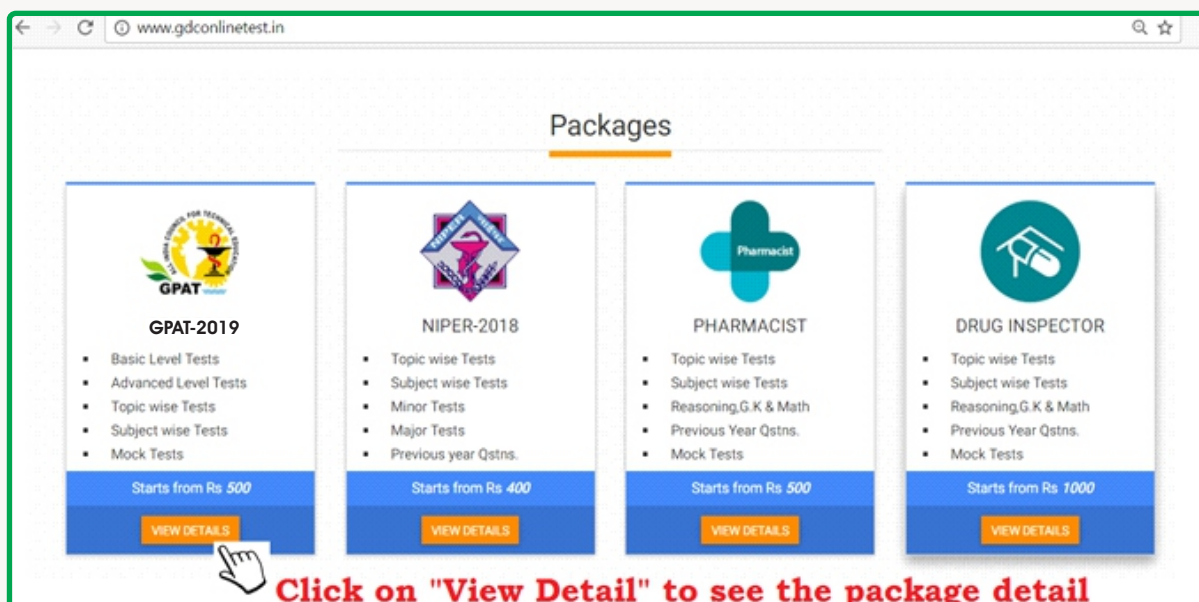


# GENERAL INSTRUCTION TO JOIN THE TEST

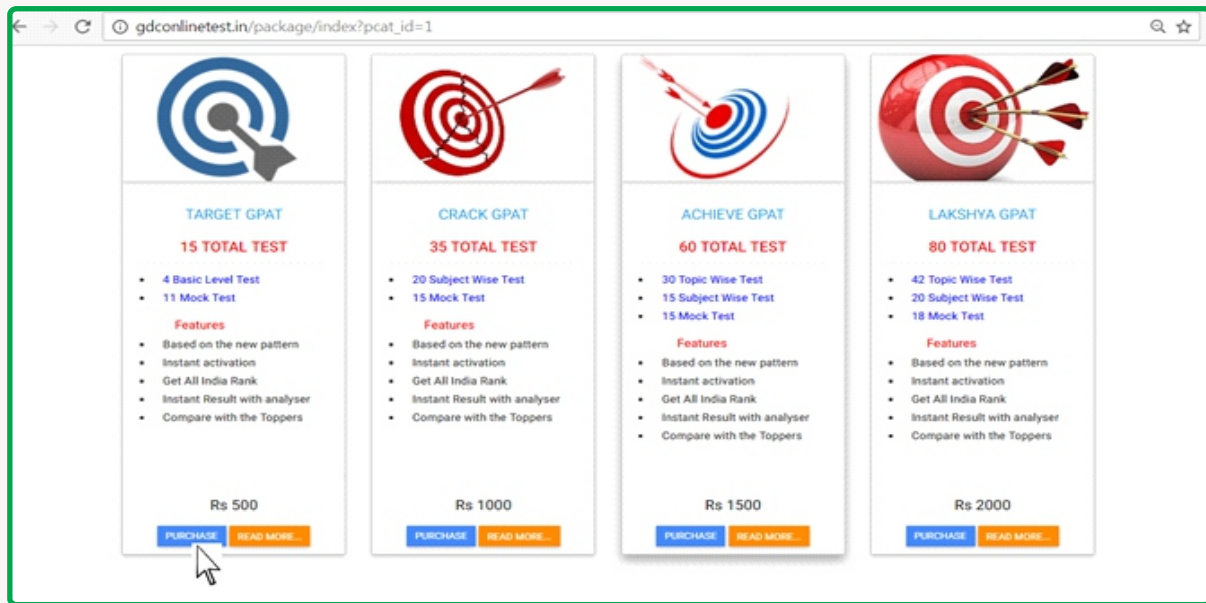
## 1. Login to website [www.gdconlinetest.in](http://www.gdconlinetest.in)



## 2. Choose the Exam you want to subscribe

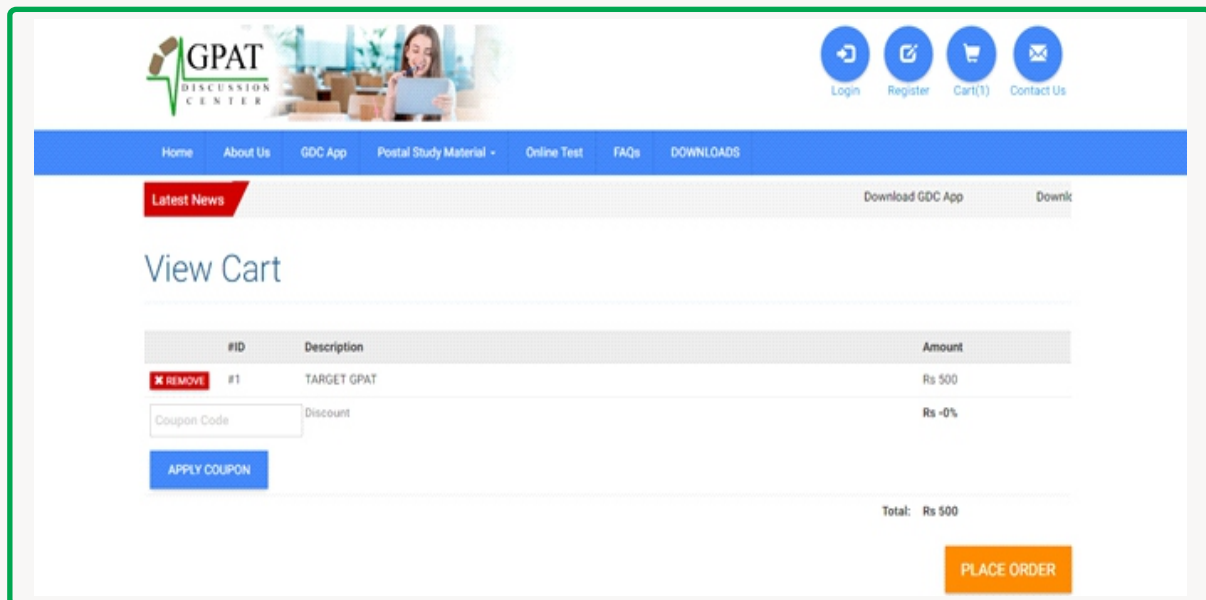


3. Select the package according to your suitability and click on “Purchase” button to further process; u can see the Test detail by click on “Read More” button.



Package Name	Total Test	Price (Rs)
TARGET GPAT	15	500
CRACK GPAT	35	1000
ACHIEVE GPAT	60	1500
LAKSHYA GPAT	80	2000

4. Place Order, If you have any “COUPON CODE” then place it for discount otherwise place order without putting Coupon Code for proceed.

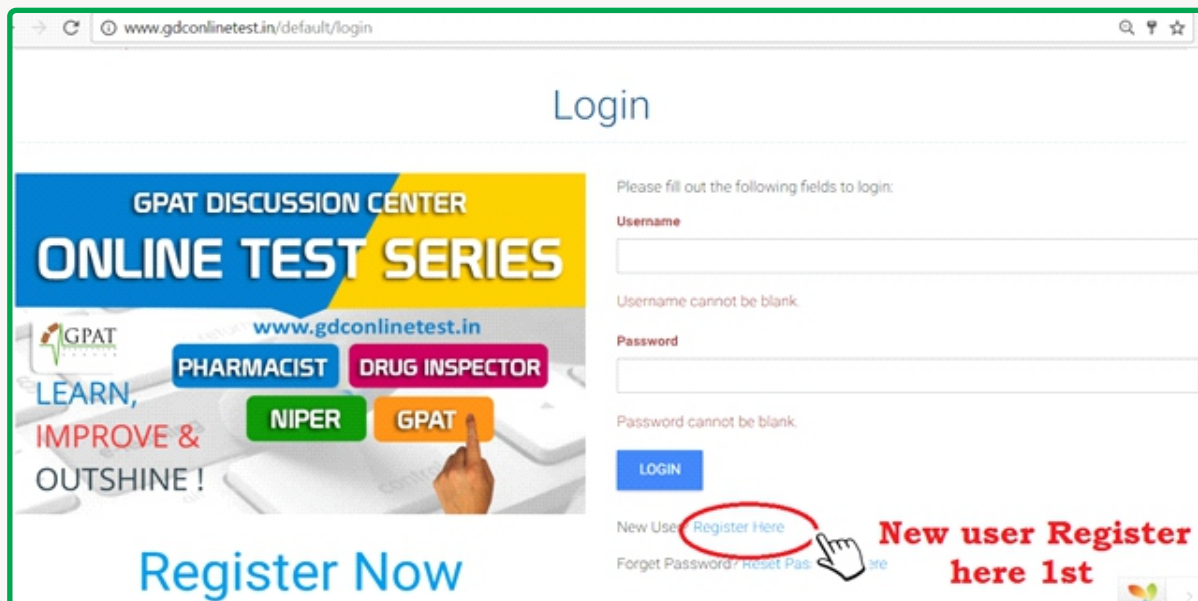


#ID	Description	Amount
<a href="#">X REMOVE</a> #1	TARGET GPAT	Rs 500
Coupon Code	Discount	Rs -0%

**Total: Rs 500**

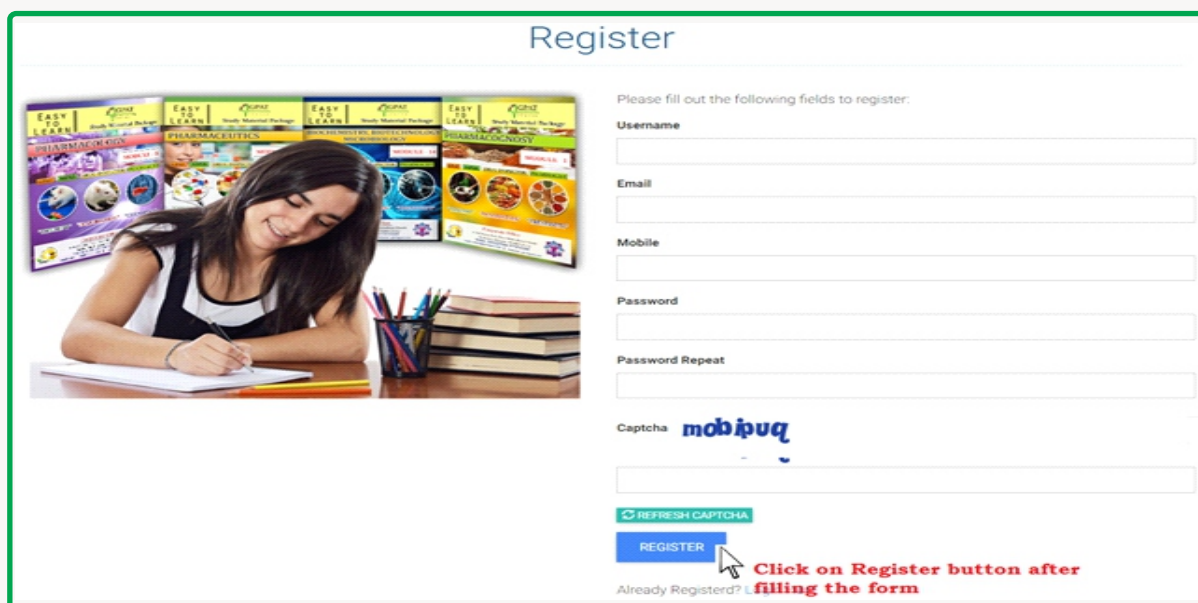
**PLACE ORDER**

**5. Register Now : New users click on the button “Register Here”**



The screenshot shows the login page of the GPAT Discussion Center. On the left, there is a banner for the 'ONLINE TEST SERIES' with buttons for 'PHARMACIST', 'DRUG INSPECTOR', 'NIPER', and 'GPAT'. A hand is pointing at the 'GPAT' button. Below the banner is a 'Register Now' button. On the right, there is a login form with fields for 'Username' and 'Password'. Below the form are links for 'New User Register Here' (circled in red) and 'Forgot Password? Reset Password'. A red text overlay says 'New user Register here 1st' with a hand icon pointing to the 'Register Here' link.

**6. Register: Fill out the following fields to register**



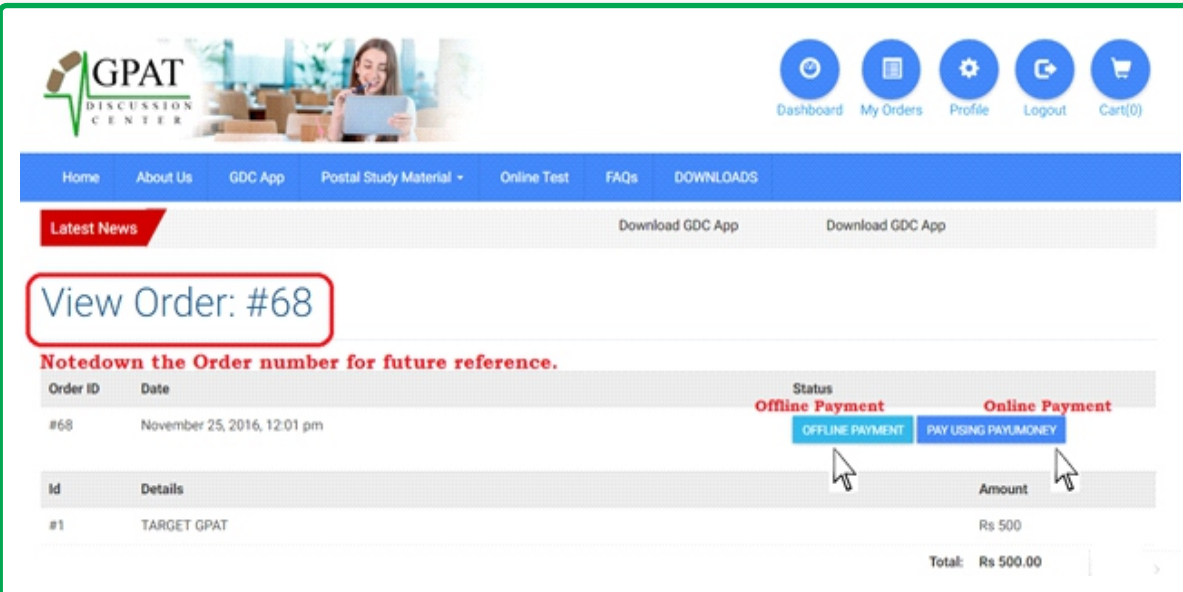
The screenshot shows the register page of the GPAT Discussion Center. On the left, there is an image of a student studying. On the right, there is a registration form with fields for 'Username', 'Email', 'Mobile', 'Password', 'Password Repeat', and 'Captcha'. Below the form are buttons for 'REFRESH CAPTCHA' and 'REGISTER'. A red text overlay says 'Click on Register button after filling the form' with a hand icon pointing to the 'REGISTER' button.

7. Now your account has been successfully created. Now place order and make payment to start the Test.

### View Cart

#ID	Description	Amount
<a href="#">X REMOVE</a> #1	TARGET GPAT	Rs 500
<input type="text" value="Coupon Code"/>	Discount	Rs -0%
<a href="#">APPLY COUPON</a>		
		Total: Rs 500
<a href="#">PLACE ORDER</a>		

8. Two option for the payment is there one is offline payment and other one is online payment by Debit or Credit Card.



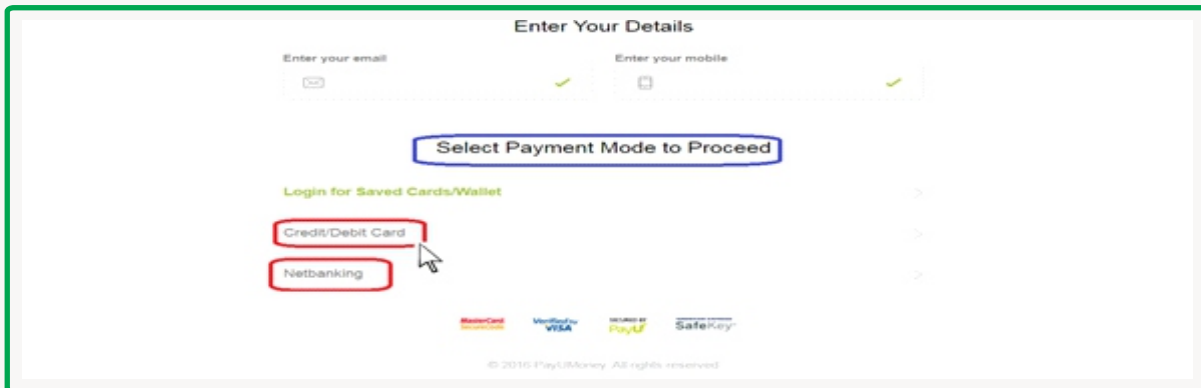
The screenshot shows the GPAT Discussion Center website. At the top, there's a navigation bar with links: Home, About Us, GDC App, Postal Study Material, Online Test, FAQs, and DOWNLOADS. Below this is a 'Latest News' section with two links: 'Download GDC App'. The main content area features a 'View Order: #68' section. It includes a note: 'Notedown the Order number for future reference.' Below this is a table with columns: Order ID, Date, Status, and Amount. The table shows one order with ID #68, dated November 25, 2016, 12:01 pm, with a status of 'Offline Payment' and an amount of Rs 500. To the right of the table, there are two buttons: 'OFFLINE PAYMENT' and 'PAY USING PAYUMONEY'. The total amount is shown as Rs 500.00.

Order ID	Date	Status	Amount
#68	November 25, 2016, 12:01 pm	Offline Payment	Rs 500

Total: Rs 500.00

## 9. Enter your Detail for online Payment

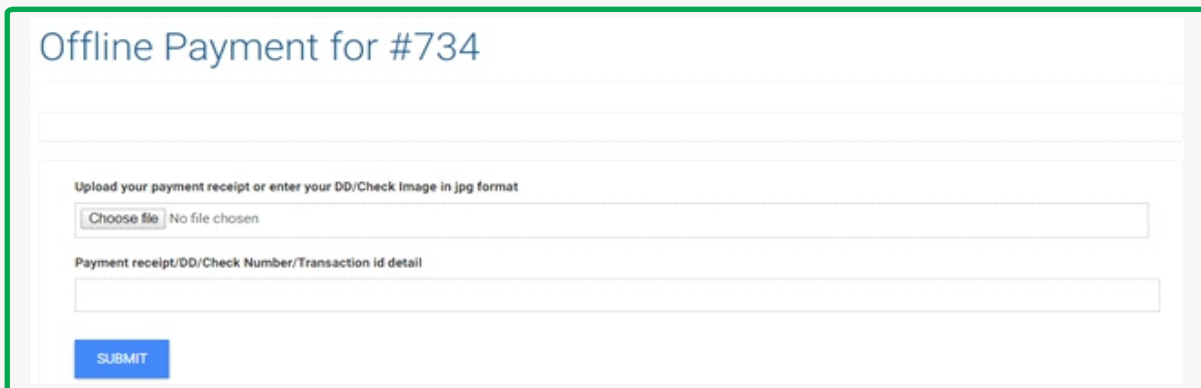
**Click on Debit/Credit Card or Netbanking for payment of Course fee.**



## 10. In case of Offline Payment,

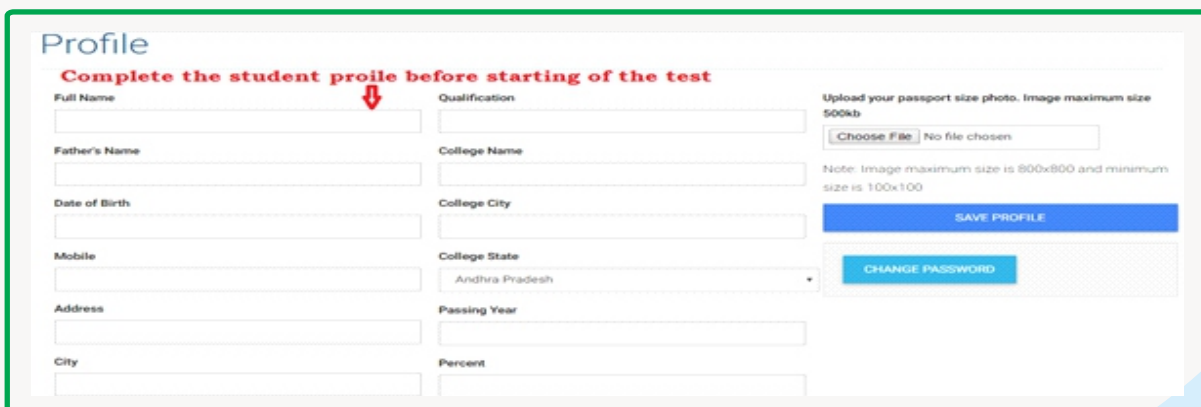
- Upload the Payment receipt
- Payment receipt detail

After submitting, send a request mail [gdcgpat037@gmail.com](mailto:gdcgpat037@gmail.com) for the approval of your account.



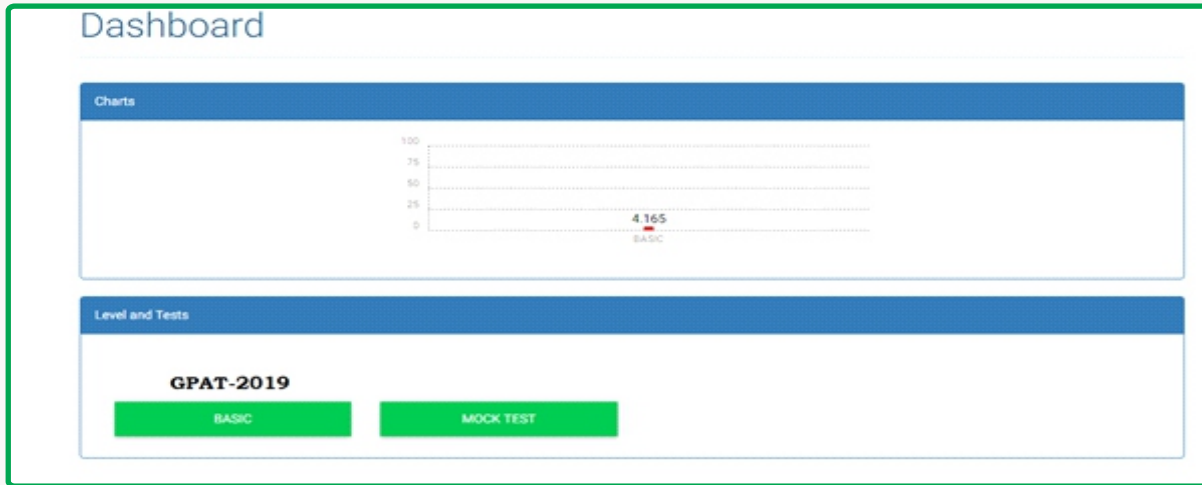
## 11. After successful approval now time to login to attempt the test.

**Login you account by your approved user name and password**





## 12. Attempt Test



## 13. Read all instruction before start of the test

**Test Number- 5**

Test Name	Duration	Total Marks	Questions
Test Number- 5	180 Mins	500	125

**Description**

Welcome to the GDC Online Test series Portal

Read the following Description carefully

- This online test containing 125 Questions.
- Marking Scheme:
  - For each correct answer, you will be awarded 4(four) marks
  - For each wrong answer, you will be deducted 1(one) marks
  - For each un-attempted question, you will be awarded 0(Zero) marks.
- You are requested to check internet and electric connection before starting the exam.

**Instructions**

These instructions should be followed by candidates while appearing in the Online Mode examination. This will familiarise candidates with the pattern / procedure of the examination.

**General Instructions:**

Please read the instructions carefully:-

- The duration of the examination is 180 minutes.
- The clock will be set at the server. The countdown timer in the top right corner of screen will display the remaining time available for you to complete the examination. When the timer reaches zero examination will end by itself. You will not be required to end or submit your examination.

## FREQUENTLY ASKED QUESTION(FAQ)

**Ques. Why should I Purchase GDC Online Test**

**Ans.**

1. Feel the Real Exam Environment through our test series.  
Our all test containing everything which you are expected to face in exam  
Exact Exam Pattern based questions  
Test Series has been designed by the highly experience subject experts.
2. Review and enhance your performance  
Check Your Score Card and rank Status  
Performance Analysis  
Detailed Solution of important question, Mail and Phone Support 24 X 7

**Ques. Is there any free demo test**

**Ans.** Yes, you can attempt one free demo test after that you decide to buy the online test.

**Ques. How can I join Online Test Series?**

**Ans:** You need to perform the following steps to join the GDC Online Test Series:  
Select the Package you want to purchase, then register into GDC Test Series Portal (for new user), fill the complete form and proceed for the Online Payment.  
(a) then place the order by selecting any one payment option given below -  
1. Online Payment- By debit card, credit card or by net banking  
2. By direct transfer the amount in our GPAT Discussion Center Account.

**Bank Name: ICICI Bank**

**Name of the Account holder: GPAT Discussion Center**

**Account Type: Current**

**Account Number: 242605500015**

**IFSC Code: ICIC0002426**

- (b) Fill the details and submit it.
- (c) You will get a account activation mail before the online payment click on that mail activate it.
- (d) Click on Purchase Now button of selected exam and make payment.
- (e) In case of direct deposition in our account candidate should scan the counter slip of cash deposited in the ICICI Bank & attach it in offline payment option. You will get information regarding your pack activation by mail or SMS within 24 hours.
- (f) After Login you can edit your Profile, Change your Password any time.
- (g) Now go to Online Test Series, and start your Online Test.

**Ques. How can I make payment to buy any study packages**

**Ans:** You can pay via debit card, credit card, net banking. If you have not any of above service then you can deposit directly in our bank account. For more details call us :

**9770765680, 8602227444.**

**Ques. After purchasing the package, when my package will be activated?**

**Ans:** After successful payment done online, then study package will be activated immediately. Now click on the packages and start your practice.

**Ques. My Transaction failed but money deducted from my account. What should I do**

**Ans:** Nothing to worry, just send us a email at [gdcgpat037@gmail.com](mailto:gdcgpat037@gmail.com) with the proper detail of your transaction, and we will do the best solution for you. Your money is safe.

**Ques. If I have paid two times or money deducted two times for a single product, now what should I do?**

**Ans:** Don't worry ! Your one of the transaction amount gets refunded. In case this does not happen, you can contact us at **9770765680, 8602227444** or mail us at [gdcgpat037@gmail.com](mailto:gdcgpat037@gmail.com). we will track your payment to get it refunded.

**Ques. Can I download the test papers?**

**Ans:** Test papers cannot be downloaded, but it is possible to refer the test papers/solutions whenever you like after login in GDC portal.

**Ques. Will there be any fixed time schedule within which I have to take the exam?**

**Ans:** There is no fixed time to appear for tests. Tests will be uploaded as per the given time table of institute and tests will be available up to Jan, 2019. You can appear for the tests as per your convenience within this time period.

**Ques. Will I get the solutions to the questions asked in the online test?**

**Ans:** Yes you will get answer of the every question after completion of the test.

**Ques. What are the types of questions asked in GPAT-2019 ?**

**Ans:** Multiple Choice Questions will be asked in GPAT-2019, and these types of questions are also included in GPAT -2019 Online Test Series.

**Ques. What is the last date to enroll for Online Test Series?**

**Ans:** U can enrol for the test any time.

**Ques. Is there is any test center or can I give the test from anywhere?**

**Ans:** No, test centers are not available for online test. You can appear for tests anytime, anywhere where internet facility is available. For classroom test series visit our website [www.gdc4gpat.com](http://www.gdc4gpat.com)

**Ques. What if I accidentally close the exam window?**

**Ans:** Your test will be resumed and you can start from the point where you had stopped.

**Ques. Can I restart my test?**

**Ans:** Yes, resume facility is available.

**Ques. How can I get my rank?**

**Ans:** All India Rank will be generated based on your performance in that particular test. By this a candidate can compare his performance with topper.

**Ques. How many times a candidate can appear for the particular test?**

**Ans:** A student can appear in any particular test only once.

**Ques. Is there any fee refund process?**

**Ans:** No, the fee is non refundable.

**Ques. Do I need special Software to access tests?**

**Ans:** No, you do not require any other software. You require system (Desktop, Laptop, Mobile) with proper internet connectivity.

**Ques. How candidate's All India Rank is generated?**

**Ans:** Candidate's Rank will be generated on a regular basis. It will be generated test-wise and the same will be updated automatically after submission of every test paper.

**Example :** During the first month if 1000 students have appeared in paper-1, then candidate's rank will be generated among 1000 students. During the second month if 5000 candidates have appeared in paper-1, then candidate's rank will be generated among 5000 students.

**Ques. Is it possible to refer the questions/solutions of test paper-1 which I had appeared 2 months back?**

**Ans:** Questions along with the solutions will be available up to the last day. Whenever you want to refer, you can log in and refer the questions/solutions of the test which you had appeared.

**Ques. Can I pay the fee through NET banking?**

**Ans:** Yes, we offer NET banking facility by which you directly transfer the amount in our Account.

**Bank Name: ICICI Bank**

**Name of the Account holder: GPAT Discussion Center**

**Account Type: Current**

**Account Number: 242605500015**

**IFSC Code: ICIC0002426**

**Ques. The test is taking too much time to upload and also my system is not working properly?**

**Ans:** We have deployed the best tested server to provide high speed and connectivity, kindly check your system and internet for speed/connectivity related issues.

**Ques. I forgot my password?**

**Ans:** Enter into login page and click on forgot password; automatically password will be mailed to your registered E-mail ID.

**Ques. Can I cancel or change my purchased Products or Services such as Online Test Series and in the case of cancellation will you refund my payment?**

**Ans:** We do not provide any option for cancellation or change in your purchased Products or Services. Once a Product or Service has been purchased by you, we can not provide any refund. We suggest that you should first go through the Free Trial Tests and free to use the contents, Products or Services before making payment.

## GPAT Discussion Center

### Aspirants 1st Choice for Pharma Exams Preparation

Allahabad | Bilaspur | Bhilai | Raipur | Nagpur | Hyderabad | Bhubaneswar | Ghaziabad | Delhi

[www.gdc4gpat.com](http://www.gdc4gpat.com), [www.gdconlinetest.in](http://www.gdconlinetest.in)

Join Our WhatsApp group:- 08737889272

**For detail contact: 8602227444, 9770765680, 8737889272**

### SUBSCRIPTION TO THE WhatsApp CHANNEL

To subscribe this free service through mobile type your name and your college name, city, and send it to 8737889272.

Lets join in this channel to hit the success point of all competitive exams.

As a member of GDC, you will become part of a vibrant community of Pharma professionals from various reputed institutions.

Your feedback: We value your opinion and strive to make GDC a better channel, Please write in with your comments to [gdcgpat037@gmail.com](mailto:gdcgpat037@gmail.com)

Share this news to your friends and associates.



**Join GPAT Discussion Center  
WHATSAPP Group**  
(Gpat/Niper Guidelines Program)  
(Separate Group For Boys and Girls)

Daily Pharma Questions  
Pharma Jobs Alert  
Pharma Seminar, Conferences  
Information about all Pharma Scholarships across India

Pharma News Alert  
Pharma Admission Alert

Send your Name, College Name  
Year Of B.Pharm  
**8737889272**

