

Youth Competition Times

KGMU

PHARMACIST

Grade-II

Practice Book

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Publisher Declaration

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full care has been taken by the Editor and the Publisher,
still your suggestions and queries are welcomed.
In the event of any dispute, the judicial area will be Prayagraj.

विषय-सूची

■ प्रैक्टिस सेट-1 व्याख्या सहित हल	9-23
■ प्रैक्टिस सेट-2 व्याख्या सहित हल	24-38
■ प्रैक्टिस सेट-3 व्याख्या सहित हल	39-52
■ प्रैक्टिस सेट-4 व्याख्या सहित हल	53-66
■ प्रैक्टिस सेट-5 व्याख्या सहित हल	67-79
■ प्रैक्टिस सेट-6 व्याख्या सहित हल	80-93
■ प्रैक्टिस सेट-7 व्याख्या सहित हल	94-106
■ प्रैक्टिस सेट-8 व्याख्या सहित हल	107-120
■ प्रैक्टिस सेट-9 व्याख्या सहित हल	121-134
■ प्रैक्टिस सेट-10 व्याख्या सहित हल	135-149
■ प्रैक्टिस सेट-11 व्याख्या सहित हल	150-164
■ प्रैक्टिस सेट-12 व्याख्या सहित हल	165-179
■ प्रैक्टिस सेट-13 व्याख्या सहित हल	180-194
■ प्रैक्टिस सेट-14 व्याख्या सहित हल	195-209
■ प्रैक्टिस सेट-15 व्याख्या सहित हल	210-224

Syllabus : Pharmacist Grade-2

Part A : Indicative Syllabus: For General Aptitude

(A) Reasoning: It would include questions of both verbal and nonverbal type. This component may include questions on analogies, similarities and differences, spatial orientation, problem solving, Analysis, judgement, decision making, discrimination, observation, relationship concepts, arithmetical reasoning and figural classification, arithmetic number series, nonverbal series, coding and decoding, statement conclusion, etc. the topics are, symbolic/ number analogy, figural analogy semantic classification, symbolic/Number Classification, Figural Classification, semantic series, number series, Figural series, problem solving, word building, coding & decoding, Numerical operations, symbolic operations Trends, space orientation, space Visualization, Venn diagrams, Drawing inferences, Punched hole/pattern-folding & unfolding, Figural pattern- Folding and completion, indexing. Address matching, Date & city matching, Classification of Centre codes/roll numbers, small & capital letters/numbers coding, decoding and classification, Embedded Figures, Critical thing, Emotional Intelligence, Social Intelligence, Other sub- topics, if any.

(B) General Knowledge: Questions in this component will be aimed at testing the candidate's general awareness of the environment around him and its application to society. Questions will also be designed to test knowledge of current events and such matters of everyday observations and experience in the Scientific aspect as may be expected of any educated person. The test will also include questions relating to India and its neighboring countries especially pertaining to history, culture geography, economic scene general policy & scientific research.

(C) Mathematics Aptitude: The questions will be designed to test the ability of appropriate use of numbers and number sense of the candidate. The scope of the test will be computation of whole numbers, decimals, fractions and the relationship between numbers percentage, Ration & Proportion, Square roots, Averages, Interest, Profit & Loss, Discount, Partnership, Elementary Surds, Graphs of Linear Equation, Triangle and its various kinds of centers, Congruence and similarity of triangles, Circle and its chords, tangents, angles subtended by chords of a circle common tangents to two or more circles, Triangle, Quadrilaterals, Regular polygons, Circle, Right Prism, Right circular cone, Right circular cylinder, Sphere, Hemispheres, Rectangular Parallel pipe, Regular right pyramid with triangular or square base, Trigonometric ration, Degree and radian Measures, Standard Identities, Complementary Angles, Heights and Distances, Histogram, Frequency, polygon, Bar diagram & pie chart.

(D) General English: Candidates ability to understand correct English, basic comprehension and writing ability will be tested, Questions in this computer will be designed to test the candidates understanding and knowledge of the English language and will be based on spot the error, fill in the blanks, synonyms, antonyms, spelling/detecting mis-spelled words, idioms and phrases. One word substitution, improvement of sentences, active/passive voice of verbs, conversion into direct/indirect narration, shuffling of sentence parts, shuffling of sentences in a passage, comprehension passage and any other English Language questions at the Level of Matriculation /Higher Secondary

Part B : Pharmacy

100% Questions to be based on Subject/Domain knowledge from the following topics:-

Introduction of different dosage forms. Their classification with examples-their relative applications. Familiarization with new drug delivery systems. Introduction to Pharmacopoeias with special reference to the Indian Pharmacopoeia.

Metrology-System of weights and measures. Calculations including conversion from one to another system. Percentage calculations and adjustment of products. Use of allegation method in calculations, Isotonic solutions.

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. Size reduction, objectives, and factors affecting size reduction, methods of size reduction- study of Hammer mill, ball mill, Fluid energy mill and Disintegrator.

Size separation-size separation by sifting. Official standards for powders. Sedimentation methods of size separation. Construction and working of Cyclone separator.

Mixing and Homogenization-Liquid mixing and powder mixing, mixing of semisolids. Study of Silverton Mixer Homogenizer, planetary Mixer; Agitated powder mixer; Triple Roller Mill; Propeller Mixer, colloid Mill and Hand Homogeniser. Double cone mixer.

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, Meta filter.

Extraction and Galenicals-

Study of percolation and maceration and their modification, continuous hot extraction-Application in the preparation of tinctures and extracts.

Introduction to Ayurvedic dosage forms.

Heat process-Evaporation-Definition-Factors affecting evaporation-study of evaporating still and Evaporating pan.

Distillation-Simple distillation and Fractional distillation, steam distillation and vacuum distillation, Study of vacuum still, preparation of purified water I.P. and water for Injection I.P. construction and working of the still used for the same.

Introduction to drying process- Study of Tray Dryers; Fluidized Bed Dryer, Vacuum Dryer and Freeze Dryer.

Sterilization-Concept of sterilization and its differences from disinfection-Thermal resistance of microorganisms. Detailed study of the following sterilization process. Sterilization with moist heat, Dry heat sterilization, Sterilization by radiation, Sterilization by filtration And 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.

Processing of Tablets-Definition; different type of compressed tablets 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 done in an elementary manner).

Processing of Capsules-Hard and soft gelatin capsules; different sizes of capsules; filling of capsules.

handling and storage of capsules. Special applications of capsules.

Study of immunological products like sera, vaccines, toxoids & their preparations.

PHARMACOGNOSY

1. Definition, history and scope of Pharmacognosy including indigenous system of medicine.
2. Various systems of classification of drugs and natural origin.
3. Adulteration and drug evaluation; significance of pharmacopeial 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, Gymnemasylyvestro.

(l) Diuretics -Gokhru, Punarnava.

(m) Antidysertery -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, sandalwood.

Pharmaceutical aids-Honey, Arachis oil, starch, kaolin, pectin, olive oil. Lanolin, Beeswax, Acacia, Tragacanth, sodium Alginate, Agar, Guar gum, Gelatin.

Miscellaneous-Liquorice, Garlic, picrorhiza, Dirscorea, Linseed, shatavari, shankhpushpi, pyrethrum, Tobacco. Collection and preparation of crude drugs for the market as exemplified by Ergot, opium, Rauwalfia, Digitalis, senna. Study of source, preparation and identification of fibers used in sutures and surgical dressings cotton, silk, wool and regenerated fibers. Gross anatomical studies of-senna, Datura, cinnamon, cinchona, fennel, clove, Ginger, Nuxvomica & ipecacuanha.

BIOCHEMISTRY AND CLINICAL PATHOLOGY

Introduction to biochemistry. Brief chemistry and role of proteins, polypeptides and amino acids, classification, Qualitative tests, Biological value, Deficiency diseases.

Carbohydrates: Brief chemistry and role of carbohydrates, classification, qualitative tests, Diseases related to carbohydrate metabolism.

Lipids: Brief chemistry and role of lipids, classification and qualitative tests. Diseases related to lipids metabolism.

Vitamins: Brief chemistry and role of vitamins and coenzymes. Role of minerals and water in life processes.

Enzymes: Brief concept of enzymatic action. Factors affecting it. Therapeutics: Introduction to pathology of blood and urine. Lymphocytes and platelets, their role in Health and disease.

Erythrocytes-Abnormal cells and their significance. Abnormal constituents of urine and their significance in diseases.

Therapeutics: Introduction to pathology of blood and urine. Lymphocytes and platelets, their role in Health and disease.

Erythrocytes- Abnormal cells and their significance. Abnormal constituents of urine and their significance in diseases.

HUMAN ANATOMY AND PHYSIOLOGY

Scope of Anatomy and physiology. Definition of various terms used in Anatomy. Structure of cell, function of its components with special reference to mitochondria and microsomes.

Elementary tissues: Elementary tissues of the body, i.e. epithelial tissue, muscular tissue, connective tissue and nervous tissue.

Skeletal System: Structure and function of Skelton Classification of joints and their function. Joint disorders.

Cardiovascular System: Composition of blood, functions of blood elements. Blood group and coagulation of blood. Brief information regarding disorders of blood. Name and functions of lymph glands. 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.

Respiratory system: Various parts of respiratory system and their functions, physiology of respiration.

Urinary System: Various parts of urinary system and their functions, structure and functions of kidney. Physiology of urine formation. Patho-physiology of renal diseases and edema.

Muscular System: Structure of skeletal muscle, physiology of muscle contraction. Names, positions, attachments and functions of various skeletal muscles. Physiology of neuromuscular junction.

Central Nervous System: Various parts of central nervous system, brain and its parts, functions and reflex action. Anatomy and physiology of automatic nervous system.

Sensory Organs: Elementary knowledge of structure and functions of the organs of taste, smell, ear, eye and skin. Physiology of pain.

Digestive System: names of various parts of digestive system and their functions. Structure and functions of liver, physiology of digestion and absorption.

Endocrine System: Endocrine glands and Hormones. Location of glands, their hormones and functions. Pituitary, thyroid, Adrenal and pancreas.

Reproductive system: Physiology and Anatomy of Reproductive system.

HEALTH EDUCATION AND COMMUNITY PHARMACY

Concept of health: Definition of physical health, mental health, social health, spiritual health determinants of health, indicatory of health, concept of disease, natural history of diseases, the disease agents, concept of prevention of diseases.

Nutrition and health: Classification of foods, requirements, diseases induced due to deficiency of proteins, vitamins and minerals-treatment and prevention. Demography and family planning: Demography cycle, fertility, family planning, contraceptive methods, behavioral methods, natural family planning methods, chemical methods, mechanical methods, hormonal contraceptives, population problem of India.

First aid: Emergency treatment in shock, snake-bite, burns, poisoning, heart disease, fractures and resuscitation methods, Elements of minor surgery and dressings.

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.

Fundamental principles of microbiology: Classification of microbes, isolation, staining techniques of organisms of common diseases.

Communicable diseases: Causative agents, mode of transmission and prevention. Respiratory infections- chicken pox, measles, influenza, diphtheria, whooping cough and tuberculosis.

Intestinal infection-poliomyelitis, Hepatitis, cholera, Typhoid, food poisoning, Hookworm infection.

Arthropod borne infections-plague, Malaria, filariasis.

Surface infection-Rabies, Trachoma, Tetanus, Leprosy.

Sexually transmitted diseases-Syphilis, Gonorrhoea, AIDS.

Non-communicable diseases: causative agents, prevention, care and control.

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 (Dispensing Pharmacy)

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.

Incompatibilities in prescriptions- study of various types of incompatibilities-physical, chemical and therapeutic.

Posology- Dose and dosage of drugs, factors influencing dose, calculations of doses on the basis of age, sex, surface area and veterinary doses.

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 highlighted).

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

Liquid oral Dosage forms:

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. Liquids for internal administration Liquids for external administration or used on mucous membranes. Mixtures and concentrates, Gargles, Syrups, Mouth washes, Throat-paints, Elixirs, Douches, Ear Drops, Nasal Drops, Sprays, Liniments & Lotions.

Biphasic Liquid Dosage Forms:

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.

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

Semi Solid Dosage Forms:

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

Preparation and stability of ointments by the following processes: Titration fusion Chemical reaction Emulsification.

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

Jellies: An introduction to the different types of jellies and their preparation. An elementary study of poultice.

Suppositories and pessaries-Their relative merits and demerits, types of suppositories, suppository bases, classification, properties, preparation and packing of suppositories. Use of suppositories of drug absorption.

Dental and cosmetic preparations: Introduction to Dentifrices, facial cosmetics, Deodorants. Anti- per spirants, shampoo, Hair dressings and Hair removers.

Sterile Dosage forms.

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.

Sterility testing: particulate matter monitoring-Faculty seal packaging.

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

PHARMACEUTICAL CHEMISTRY

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.

Antiseptics and Disinfectants-Proflavine, Benzalkonium chloride, Cetrimide, Phenol, chloroxylenol, Formaldehyde solution, Hexachlophene, Nitrofurantoin.

Sulphonamides-Sulphadiazine, Sulphaguanidine, Phthalylsulphathaizole, Succinylsulphathiazole, Sulphadimethoxine, Sulphamethoxypyridazine, Co-trimoxazole, sulfacetamide

Antileprotic Drugs-Clofazimine, Thiambutosine, Dapsone, solapsone,

Anti-tubercular Drugs Isoniazid, PAS, Streptomycin, Rifampicin, Ethambutol*, Thiacetazone, Ethionamide, cycloserine, pyrazinamide.

Antiamoebic and Antihelminthic Drugs Emetine, Metronidazole, Halogenated hydroxyquinolines, Diloxanidefuroate, Paromomycin, Piperazine, Mebendazole, D.E.C.

Antibiotics- Benzylpenicillin, Phenoxy methyl penicillin, Benzathine penicillin, Ampicillin, Cloxacillin, Carbenicillin, Gentamicin, Neomycin, Erythromycin, Tetracycline, Cephalexin, Cephaloridine, Cephalothin, Griseofulvin, Chloramphenicol.

Antifungal agents-Udecylenic acid, Tolnaftate, Nystatin, Amphotericin, Hamycin.

Antimalarial Drugs-Chloroquine, Amodiaquine, Primaquine, Proguanil, Pyrimethamine, Quinine, Trimethoprim.

Tranquilizers-Chlorpromazine, Prochlorperazine, Trifluoperazine, Thiothixene, Haloperidol, Triperidol, Oxypterpine, Chlordiazepoxide, Diazepam, Lorazepam, Meprobamate.

Hypnotics-Phenobarbitone, Butobarbitone, Cylobarbitone, Nitrazepam, Glutethimide*, Methyprylon, Paraldehyde, Triclofosodium.

General Anaesthetics-Halothane, Cyclopropane, Diethyl ether, Methohexitol sodium, Thiopental sodium, Trichloroethylene.

Antidepressant Drugs- Amitriptyline, Nortriptyline, Imipramine, Phephazine, Tranylcypromine.

Analeptics-Theophylline, Caffeine, Coramine, Dextro-amphetamine.

Adrenergic drugs Adrenaline, Noradrenaline, Isoprenaline, Phenylephrine, Salbutamol, Terbutaline, Ephedrine, Pseudoephedrine.

Adrenergic antagonist-Tolazoline, Propranolol, Practolol.

Cholinergic Drugs- Neostigmine, Pyridostigmine, Pralidoxime, Pilocarpine, Physostigmine.

Cholinergic Antagonists- Atropine, Hyoscine, Homatropine, Propantheline, Benztropine, Tropicamide, Biperiden.

Diuretic Drugs- Furosemide, Chlorothiazide, Hydrochlorothiazide, Benzthiazide, Urea, Mannitol, Ethacrynic Acid.

Cardiovascular Drugs-Ethylnitrite, Glyceryl trinitrate, Alpha methyldopa, Guanethidine, Clofibrate, Quinidine.

Hypoglycemic Agents- Insulin, Chlorpropamide, Tolbutamide, Glibenclamide, Phenformin, Metformin.

Coagulants and Anti coagulants Heparin, Thrombin, Menadione, Bisphydroxycoumarin, Warfarin sodium.

Local Anaesthetics-Lignocaine, Procaine, Benzocaine.

Histamine and anti-Histaminic Agents- Histamine, Diphenhydramine, Promethazine, Cyproheptadine, Mepyramine, Pheniramine, Chlorpheniramine.

Analgesics and Anti-pyretics-Morphine, Pethidine, Codeine, Methadone, Aspirin, Paracetamol, Analgin, Dextropropoxphene, Pentazocine.

Non-steroidal anti-inflammatory agents- Indomethacin, Phenylbutazone, Oxyphenbutazone, Ibuprofen.

Thyroxine and Antithyroids- Thyroxine*, Methimazole, Methyl thiouracil, Propylthiouracil.

Diagnostic Agents Lopanoic Acid, Propylidone, Sulfobromophthalein-sodium, Indigotindisulfonate, Indigo Carmine, Evans blue, Congo Red, Fluorescein sodium. Anticonvulsants, cardiac glycosides, Antiarrhythmic, Antihypertensives & Vitamins.

Steroidal Drugs Betamethasone, Cortisone, Hydrocortisone, Prednisolone, Progesterone, Testosterone, Oestradiol, Nandrolone.

Anti-Neoplastic Drugs-Actinomycin, Azathioprine, Busulphan, Chloramubucil, Cisplatin, Cyclophosphamide, Daunorubicin Hydrochoride, Fluorouracil, Mercaptopurine, Methotrexate, Mytomycin.

PHARMACOLOGY & TOXICOLOGY

Introduction to Pharmacology, Scope of Pharmacology.

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. General mechanism of drugs action and their factors which modify drugs action. Pharmacological classification of drugs. The discussion of drugs should emphasize the following aspects: Drugs acting on the central Nervous system:

General anaesthetics- adjunction to anaesthesia, intravenous anaesthetics. Analgesic antipyretics and non-steroidal.

Anti-inflammatory drugs- Narcotic analgesics. Antirheumatic and anti-gout remedies.

Sedatives and Hypnotics, psychopharmacological agents, anticonvulsants, analeptics. Centrally acting muscle relaxants and anti-parkinsonism agents. Local anesthetics. Drugs acting on autonomic nervous system. Cholinergic drugs, Anticholinergic drugs, anticholinesterase drugs. Adrenergic drugs and adrenergic receptor blockers. Neurone blockers and ganglion blockers. Neuromuscular blockers, used in myasthenia gravis. Drugs acting on eye: Mydriatics, drugs used in glaucoma. Drugs acting on respiratory system, Respiratory stimulants, Bronchodilators, Nasal decongestants, Expectorants and Antitussive agents.

Autocoids: Physiological role of histamine and serotonin, Histamine and Antihistamines, prostaglandins.

Cardio vascular drugs. Cardiotonics, Antiarrhythmic agents, Anti-anginal agents, Antihypertensive agents, peripheral Vasodilators and drugs used in atherosclerosis. Drugs acting on the blood and blood forming organs. Haematinics, coagulants and anticoagulants, Haemostatic, Blood substitutes and plasma expanders.

Drugs affecting renal function- Diuretics and anti-diuretics.

Hormones and hormone antagonists- hypoglycemic agents, Antithyroid drugs, sex hormones and oral contraceptives, corticosteroids.

Drugs acting on digestive system-carminatives, digest ants, Bitters, Antacids and drugs used in peptic ulcer, purgatives and laxatives, Anti-diarrhoeal, Emetics, Anti-emetics, Antispasmodics.

Chemotherapy of microbial diseases: Urinary antiseptics, sulphonamides, penicillin, streptomycin, Tetracyclines and other antibiotics. Anti-tubercular agents, Antifungal agents, antiviral drugs, anti-leprotic drugs. Chemotherapy of protozoal diseases, Anthelmintic drugs. Chemotherapy of cancer.

PHARMACEUTICAL JURISPRUDENCE

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. Principles and significance of professional Ethics. Critical study of the code of pharmaceutical Ethics drafted by Pharmacy Council of India.

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.

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,C1,F,G,J,H,P and X and salient features of labeling and storage conditions of drugs.

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.

Narcotic Drugs and psychotropic substances Act, 1985-A brief study of the act with special reference to its objectives, offences and punishment. Brief introduction to the study of the following acts:

Latest Drugs (price control) order in force (as amended to date) Medicinal and Toilet preparations (excise Duties) Act, 1955 (as amended to date). Medical Termination of Pregnancy Act, 1971.

DRUG STORE AND BUSINESS MANAGEMENT-

Introduction-Trade, Industry and commerce, Functions and subdivision of commerce, Introduction to Elements for Economics and Management. Forms of Business Organizations. Channels of Distribution.

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. 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.

Sales promotion, Market Research, Salesmanship, qualities of a salesman, Advertising and Window Display.

Recruitment, training, evaluation and compensation of the pharmacist.

Banking and Finance-Service and functions of bank, Finance planning and sources of finance.

HOSPITAL AND CLINICAL PHARMACY

Hospital-Definition, Function, classifications based on various criteria, organization, Management and health delivery system in India.

Hospital Pharmacy: Definition Functions and objectives of Hospital pharmaceutical services. Location, Layout, Flow chart of materials and men. Personnel and facilities requirements including equipments based on individual and basic needs. Requirements and abilities required for Hospital pharmacists.

Drug Distribution system in Hospitals. Out-patient service, 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.

Manufacturing: Economical considerations, estimation of demand.

Sterile manufacture-Large and small volume parenterals, facilities, requirements, layout production planning, man-power requirements.

Non-sterile manufacture-Liquid orals, externals, Bulk concentrates. Procurement of stores and testing of raw materials. Nomenclature and uses of surgical instruments and Hospital Equipments and health accessories.

Hospital Formulary system and their organization, functioning, composition.

Drug Information service and Drug Information Bulletin.

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.

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

Clinical Pharmacy:

Introduction to Clinical pharmacy practice-Definition, scope.

Modern dispensing aspects- Pharmacists and patient counseling and advice for the use of common drugs, medication history. Common daily terminology used in the practice of Medicine.

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. Physiological parameters with their significance.

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

Adverse Drug Reaction: Definition and significance. Drug-Induced diseases and Teratogenicity

Drugs in Clinical Toxicity- Introduction, general treatment of poisoning, systemic antidotes, Treatment of insecticide poisoning, heavy metal poison, Narcotic drugs, Barbiturate, Organophosphorus poisons.

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

Bio-availability of drugs, including factors affecting it.

PRACTICE SET-01

1.	Shells of soft gelatin capsules are made elastic by adding (a) PEG (b) Sorbitol (c) Povidone (d) Buna-N	13.	Which of the following vitamin helps in blood clotting? (a) Vitamin A (b) Vitamin C (c) Vitamin D (d) Vitamin K
2.	The three rollers in triple roller mill are arranged in which of the following manner? (a) Horizontally (b) Vertically (c) Pyramid (d) Triangular	14.	Which of the following compound possess high aqueous solubility? (a) Hydrated (b) Anhydrous (c) Semisolid (d) Crystals
3.	Paka is which type of ayurvedic dosage form? (a) Solid (b) Semisolid (c) Liquid (d) Powder	15.	Which of the following is a polar aprotic Solvent (a) Water (b) Ethanol (c) Chloroform (d) DMF
4.	Dry heating at 100°C for 1 hour causes (a) Sterilization (b) Kills vegetative bacteria and spores. (c) Kills vegetative bacteria or spore. (d) Does not kill vegetative bacteria or spore.	16.	How many isomers are possible for glucose (a) 6 (b) 8 (c) 12 (d) 16
5.	Filter press has following advantages, except (a) It provides large surface area. (b) It is a continuous process. (c) Filter media can be used repeatedly. (d) High filtration pressure can be used.	17.	Sodium in liquid ammonia is used in (a) Clemenson reduction (b) Birch reduction (c) Wolf-Kishner reduction (d) Stephen reduction
6.	Abbreviation of HEPA? (a) Higher Efficacious Particulate Air (b) High Effective Particulate Atmosphere (c) Highly Energetic Particles Availability (d) High Efficiency Particulate Air	18.	Crystallisation of sugar is due to (a) Saturation (b) Drying (c) Unsaturation (d) Low concentration
7.	The natural alkaloid used in the treatment of gout is : (a) Cinchnine (b) Colchicine (c) Reserpine (d) Emetine	19.	Select the correct name for cranial nerve -X (a) Olfactory (b) Optic (c) Facial (d) Vagus
8.	_____ is a cardiac glycoside containing crude belonging to the apocynaceae family. (a) Digitalis (b) Adonis (c) Strophanthus (d) Convallaria	20.	During the embryonic development midbrain is developed from? (a) Rhombencephalon (b) Mesencephalon (c) Procencephalon (d) Telencephalon
9.	Which of the following substances is classified as deliriant poison? (a) Nicotine (b) Caffeine (c) Hyoscyamine (d) Loganin	21.	Urea formation occurs in (a) Heart (b) Liver (c) Spleen (d) Kidney
10.	Which of the following can be used as anti-dysenteric ? (a) Vinca (b) Digitalis (c) Arjuna (d) Catechu	22.	Bile is formed in (a) Gall bladder (b) Liver (c) Spleen (d) Blood
11.	Identify the correct biological source of Vinca. (a) Cephaelis roseus (b) Catharanthus roseus (c) Catharanthus officinale (d) Terminalia officinalis	23.	Right-sided cardiac failure is called: (a) Congestive cardiac failure (b) Left ventricular failure (c) Chronic cardiac failure (d) Acute cardiac failure
12.	The following chemical constituent is principally present in Asafoetida ? (a) Ferulic acid (b) Styrene (c) Boswellic acid (d) Capsaicin	24.	Bronchial obstruction is a common symptom of: (a) Liver failure (b) Asthma (c) Lung cancer (d) Cancer
13.		25.	Which of the following organisms is used in alcoholic fermentation ? (a) Pseudomonas (b) Aspergillus (c) Saccharomyces (d) Penicillium

26. Leptospirosis is a ____ infection.
 (a) Bacterial (b) Parasitic
 (c) Viral (d) Fungal

27. Which of the following is a morbidity indicator?
 (a) Child death rate
 (b) Life expectancy
 (c) Case fatality rate
 (d) Incidence

28. Which of the following is NOT an epidemiological index for measuring the tuberculosis problem in a community?
 (a) Mortality
 (b) Prevalence
 (c) Morbidity
 (d) Notification rate

29. Which of the following is NOT an ideal characteristic of health indicators?
 (a) Reliable (b) Specific
 (c) Resilient (d) Relevant

30. Which of the following is NOT a parameter of the traditional triangle of epidemiology?
 (a) Environment (b) Agent
 (c) Morbidity (d) Host

31. Gelatin is used as
 (a) Sweetener
 (b) Encapsulating agent
 (c) Antifungal agent
 (d) Stabilizer

32. If the Carr's index of powder is 10% type of powder flow is?
 (a) Good (b) Average
 (c) Excellent (d) Poor

33. A prescription contains 'Oculent. Ciprofloxacin 0.3% b.i.d.' As a pharmacist, how you will give instructions to the patient regarding its use?
 (a) Twice a day, apply on wound
 (b) Twice a day, apply on the eyes
 (c) Before dinner, apply on wound
 (d) Before dinner, apply on the eyes

34. Fluid thioglycolate media is used for the detection of:
 (a) Aerobes
 (b) Anaerobes
 (c) Aerobes and anaerobes
 (d) Aerobic bacteria and lower fungi

35. Dose calculation based on body surface area is depicted by ____ formula.
 (a) Bruntion's
 (b) Crawford Terry Rourke's
 (c) Augsberger's
 (d) Fried's

36. Which compound of sulphur is used in shampoos for anti-dandruff qualities.
 (a) Selenium sulphide
 (b) Sulphur
 (c) Yellow mercuric oxide
 (d) Titanium dioxide

37. Which is not correct with respect to Griseofulvin ?
 (a) It is not effective against candida
 (b) It interferes with nucleic acid synthesis
 (c) It is largely excreted in urine
 (d) It acts as purine analogue

38. Which one of the following is used as an antifungal drug?
 (a) Hamycin (b) Mytomycin
 (c) Neomycin (d) Cycloserine

39. Tranexamic acid is:
 (a) Anti-platelet agent
 (b) Anti-fibrinolytic agent
 (c) Fibrinolytic agent
 (d) Anticoagulant

40. Which inorganic salt is used as an expectorant?
 (a) Ammonium Chloride
 (b) Magnesium Chloride
 (c) Zinc Chloride
 (d) Sodium Bicarbonate

41. Reduced bronchodilation by a beta2 agonist prescribed with a non-selective beta-blocker is an example of:
 (a) Behavioural drug-drug interaction
 (b) Pharmaceutical drug-drug interaction
 (c) Pharmacokinetic drug-drug interaction
 (d) Pharmacodynamic drug-drug interaction

42. Which of the following is a correct match of drug and its mechanism of action in the management of congestive heart failure?
 (a) Hydralazine - Preload reduction
 (b) Torasemide - Afterload reduction
 (c) Levosimendan - Positive inotropic effect
 (d) Dobutamine - Reduced heart rate

43. Dapagliflozin causes hypoglycaemia by:
 (a) Increased glucose uptake in cell
 (b) Inhibiting gluconeogenesis in liver and kidney
 (c) Increasing glucose excretion in urine
 (d) sensitizing insulin receptors

44. Ivermectin exerts its anthelmintic action through:
 (a) Activation of glycine gated Cl- channel
 (b) Activation of glutamate gated Cl- channel
 (c) Activation of nicotinic cholinergic receptors
 (d) Leakage of intracellular Ca^{+2}

45. Which antihypertensive drug is a direct renin inhibitor?
 (a) Moexipril
 (b) Moxonidine
 (c) Aliskiren
 (d) Phenoxybenzamine

46. The pharmacy council of India is constituted by the
 (a) Central government
 (b) State government
 (c) Parliament
 (d) Legislative assembly

47. _____ has been set up for the analysis of drugs and cosmetics.
 (a) Analytical laboratory
 (b) Central drug laboratory
 (c) Private laboratory
 (d) Control laboratory

48. India's first Central Drug Laboratory was established at
 (a) Mumbai (b) Lucknow
 (c) Kolkata (d) Hyderabad

49. Under the medicine and cosmetics Act 1940 and rules 1945, the rights of medicine superintendents have been provided?
 (a) Section 22 (b) Section 23
 (c) Section 20 (d) Section 21

50. Under the Drug and Cosmetic Act the Rules are divided into how many parts?
 (a) 16 (b) 12
 (c) 18 (d) 24

51. GMP stands for _____
 (a) Good manufacturing process
 (b) Good manufacturing practice
 (c) Good marketing process
 (d) General manufacturing practice

52. The drug store should have adequate space for storage of drugs, with proper:
 (a) Lighting and ventilation
 (b) Lighting, ventilation, and temperature controls
 (c) Ventilation and temperature control
 (d) Temperature controls

53. A middleman is the person who provides a link between the:
 (a) Customer and owner
 (b) Manufacturer and customer
 (c) Manufacturer and owner
 (d) Workers and owner

54. Overdraft in banking services refers to
 (a) Banks encash their customers bills before they become due for payment.
 (b) Bank advances a certain sum to customer against some security.
 (c) Bank fixes a limit upto which a customer may borrow money from it against security.
 (d) Allowing customer to draw cheques even if there is no balance in his account.

55. The first step of patient counseling after meeting the patient is:
 (a) To evaluate the patient's knowledge of medicines

(b) Introduction
 (c) To discuss the information required by the patient
 (d) To tell about medicines and their importance

56. The following dispensary area in square feet is required in the 100 beds capacity hospital ?
 (a) 350 (b) 500
 (c) 100 (d) 450

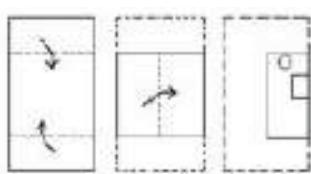
57. 'Post Marketing Trials' comes under clinical trial
 (a) Phase I (b) Phase II
 (c) Phase III (d) Phase IV

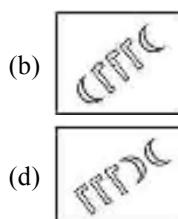
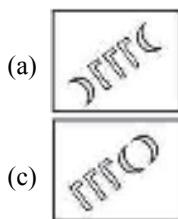
58. Sterility testing of surgical suture material requires incubation for _____ period.
 (a) 7 days (b) 14 days
 (c) 28 days (d) 2 months

59. Name the Hospital, in which the first Hospital Formulary for a Government teaching Hospital in India is published in 1997?
 (a) CMC Vellore
 (b) Govt. Medical College, Thiruvananthapuram
 (c) Kasturba Medical College, Manipal, Karnataka
 (d) Govt. Medical College, Chennai

60. Which of the following substrate inhibits bacterial folic acid synthesis?
 (a) Dapsone (b) Ivermectin
 (c) Amphotericin (d) Artesunate

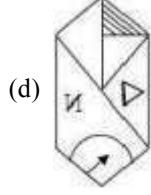
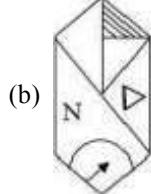
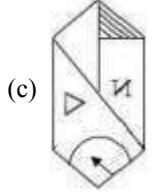
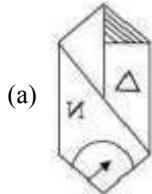
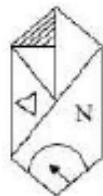
61. Select the correct option that indicates the arrangement of the given words in the order in which they appear in an English dictionary.
 उस सही विकल्प का चयन करें, जो दिए गए शब्द विन्यास का वह क्रम दर्शाता है, जिस प्रकार वे अंग्रेजी शब्दकोश में होते हैं।
 1. Multifocal
 2. Movement
 3. Multinomial
 4. Moviemaker
 5. Mutual fund
 (a) 4, 2, 1, 3, 5 (b) 1, 5, 2, 3, 4
 (c) 4, 2, 3, 1, 5 (d) 2, 4, 1, 3, 5

62. The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown in the following figures. How would this paper look when unfolded?
 निम्न चित्रों में एक कागज के टुकड़े को मोड़ने का क्रम और मुड़े हुए कागज को काटने का तरीका दर्शाया गया है। यह कागज खोलने पर कैसा दिखेगा?




70. Select the correct mirror image of the given figure when the mirror is placed at the right side of the figure.

यदि दर्पण को दी गई आकृति के दाईं ओर रखा जाए, तो दी गई आकृति का दर्पण में निर्मित सही प्रतिबिंब चयनित कीजिए।



71. The Indian Mutiny of 1857 effectively ended in the city of ____.

1857 की भारतीय क्रान्ति प्रभावी रूप से ____ शहर में समाप्त हुई।

- (a) Lucknow/लखनऊ
- (b) Amritsar/अमृतसर
- (c) Gwalior/ग्वालियर
- (d) Vadodara/वडोदरा

72. In which of the following years did the Indian National Congress make the demand for a Constituent Assembly?

निम्न में से किस वर्ष में, भारतीय राष्ट्रीय कांग्रेस ने संविधान सभा की मांग की थी?

- (a) 1934
- (b) 1919
- (c) 1939
- (d) 1928

73. Rain is liquid ____.

वर्षा एक तरल ____ है।

- (a) sedimentation/अवसादन
- (b) decantation/निस्तारण
- (c) precipitation/अवक्षेपण
- (d) condensation/संघनन

74. Which amendment of the Constitution of India incorporated Goa, Daman and Diu as the eighth union territory of India, by amending the First Schedule to the Constitution?

निम्नलिखित में से किस संशोधन द्वारा भारतीय संविधान की पहली अनुसूची में संशोधन करके गोवा, दमन और दीव को भारत के आठवें केंद्रशासित प्रदेश के रूप में शामिल किया गया?

- (a) 18th/वें
- (b) 12th/वें
- (c) 10th/वें
- (d) 13th/वें

75. When is the National Consumer Rights Day observed in India every year?

भारत में प्रति वर्ष राष्ट्रीय उपभोक्ता अधिकार दिवस कब मनाया जाता है?

- (a) 13 March/13 मार्च
- (b) 24 December/24 दिसंबर
- (c) 24 November/24 नंवर
- (d) 2 October/2 अक्टूबर

76. What is the pH value of acidic substances?

अम्लीय पदार्थों का पी. एच. (pH) मान क्या होता है?

- (a) Below 1.0/2.0 से कम
- (b) Below 4.0/4.0 से कम
- (c) Below 2.0/2.0 से कम
- (d) Below 7.0/7.0 से कम

77. ____ is a process of forming a thick oxide layer of aluminium.

____ एल्युमिनियम की मोटी ऑक्साइड परत बनाने की एक प्रक्रिया है।

- (a) Galvanisation/गैल्वनाइजेशन
- (b) Ductility/लचीलापन (डक्टीलिटी)
- (c) Corrosion/जंग (कोरोजन)
- (d) Anodising/एनोडाइजिंग

78. ____ is an interpreted, high-level and general-purpose programming language.

____ एक व्याख्यापरक, उच्च-स्तरीय और सामान्य-प्रयोजन वाली प्रोग्रामिंग भाषा है।

- (a) Cookie/कुकी
- (b) Spider/स्पाइडर
- (c) Python/पाइथन
- (d) Penguin/पेंगुइन

79. Where did India organize 'Kazind 2024' with which country in September 2024?/सितम्बर

2024 में भारत ने किस देश के साथ 'काजिंद 2024' का आयोजन कहाँ हुआ?

- (a) India/भारत
- (b) Vietnam/वियतनाम
- (c) Kazakhstan/कजाकिस्तान
- (d) Uzbekistan/उज्जेकिस्तान

80. Who has been announced to be awarded the Dadasaheb Phalke Award in September 2024? सितम्बर 2024 में किसे दादा साहेब फाल्के पुरस्कार प्रदान करने की घोषणा की गई है?

(a) Ranveer Kapoor/रणवीर कपूर
(b) Mithun Chakraborty/मिथुन चक्रवर्ती
(c) Waheeda Rehman/वहीदा रहमान
(d) Kriti Sanan/कृति सेनन

81. The average daily income of Satyam Lal during the month of February 2020 was ₹560. The average income for the first 16 days was ₹590 and for the last 16 days it was ₹500. What was his average income for 14th, 15th and 16th February? फरवरी 2020 के दौरान, श्याम लाल की औसत दैनिक आय ₹560 थी। पहले 16 दिनों के लिए औसत आय ₹590 थी और अंतिम 16 दिनों के लिए औसत आय ₹500 थी। 14, 15 और 16 फरवरी को उसकी औसत आय ज्ञात करें।

(a) ₹590 (b) ₹587
(c) ₹545 (d) ₹400

82. If $a : b = 2 : 3$ and $c : d = 5a : 3b$, then $2c : 5d$ is equal to: यदि $a : b = 2 : 3$ और $c : d = 5a : 3b$ है, तो $2c : 5d$ का मान ज्ञात करें।

(a) 1 : 1 (b) 10 : 9
(c) 4 : 9 (d) 9 : 10

83. A rhombus of side 28 cm has one angle of 60° . What is the length of the larger diagonal? 28 cm भुजा वाले समचतुर्भुज का एक कोण 60° है। बड़े विकर्ण की लंबाई ज्ञात करें।

(a) 28 cm (b) $28\sqrt{2}$ cm
(c) $28\sqrt{3}$ cm (d) $28(1+\sqrt{3})$ cm

84. A shopkeeper bought pens at the rate of ₹1,350 for 15 dozen pens and sold them at the rate of ₹495 for 5 dozen pens. His percentage profit or percentage loss is: कोई दुकानदार ₹1,350 के मूल्य में 15 दर्जन पेन खरीदता है और उन्हें ₹495 प्रति 5 दर्जन पेन के मूल्य में बेचता है। उसका प्रतिशत लाभ या प्रतिशत हानि ज्ञात करें।

(a) Profit 10%/लाभ 10%
(b) Loss 10%/हानि 10%
(c) Loss 15%/हानि 15%
(d) Profit 15%/लाभ 15%

85. An article was sold for ₹ 512 after giving two equal successive discounts on the marked price of ₹ 800. The percentage discount offered is: एक वस्तु का मार्केट प्राइस ₹ 800 पर दो बराबर प्रतिशत छूट देने के बाद, कोई वस्तु ₹512 में बेची गई। दी गई प्रतिशत छूट ज्ञात करें।

(a) 18% (b) 15%
(c) 20% (d) 16%

86. ABC is a right angled triangle, right-angled at B, C is a point on AC such that $AD = 12$ cm and $CD = 16$ cm. If BD bisects $\angle ABC$, then the perimeter of ΔABC will be: ABC एक समकोण त्रिभुज है, जिसमें कोण B समकोण है। AC पर बिन्दु D इस प्रकार स्थित है कि $AD = 12$ cm और $CD = 16$ cm है। यदि BD, $\angle ABC$ को समद्विभाजित करती है, तो ΔABC का परिमाप ज्ञात करें।

(a) 67.2 cm (b) 66 cm
(c) 56.2 cm (d) 66.2 cm

87. Two chords AB and CD of a circle intersect at O. If $CO = 4$ cm, $OD = 3.75$ cm and $AB = 8$ cm, then what is the length (in cm) of the smaller among AO and OB? एक वृत्त की दो जीवाएँ AB और CD, एक दूसरे को बिन्दु O पर प्रतिच्छेद करती हैं। यदि $CO = 4$ cm, $OD = 3.75$ cm और $AB = 8$ cm है, तो AO और OB में से छोटी भुजा की लम्बाई (cm में) कितनी होगी?

(a) 2.75 (b) 3
(c) 5 (d) 5.25

88. The volume of a metallic cylindrical pipe is 3564 cm^3 . If its external radius is 12 cm and thickness is 3 cm, then the length of the pipe will be: Take $\pi = 22/7$ किसी धात्विक बेलनाकार पाइप का आयतन 3564 cm^3 है। यदि इसकी बाह्य त्रिज्या 12 cm और मोटाई 3 cm है, तो पाइप की लम्बाई ज्ञात करें।

$(\pi = \frac{22}{7} \text{ ले})$

(a) 22 cm (b) 18 cm
(c) 16 cm (d) 20 cm

89. Solve the following equation and find the value of θ . निम्न समीकरण में θ का मान ज्ञात करें।

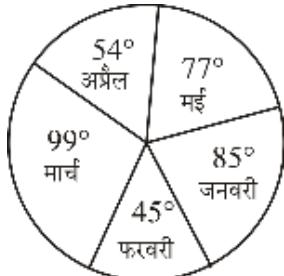
$3\cot\theta + \tan\theta - 2\sqrt{3} = 0, 0 < \theta < 90^\circ$

(a) 30° (b) 45°
(c) 15° (d) 60°

90. Study the given pie chart and answer the question that follows. The pie chart shows the distribution (degree-wise) of the number of computers sold by a shopkeeper during five months. दिए गए पाई चार्ट का अध्ययन करें और पूछे गए प्रश्न का उत्तर दें।

पाई चार्ट, पाँच महीनों के दौरान किसी दुकानदार द्वारा बेचे गए कम्प्यूटरों की संख्या के वितरण को (डिग्री वार) दर्शाता है।

बेचे गए कम्प्यूटरों की कुल संख्या = 5400



In which month was the number of computers sold above 25% of the total number of computers sold in 5 months?

उक्त में से किस महीने में बेचे गए कम्प्यूटरों की संख्या 5 महीनों में बेचे गए कम्प्यूटरों की कुल संख्या के 25% से अधिक थी?

- (a) March /मार्च
- (b) May /मई
- (c) January /जनवरी
- (d) February /फरवरी

91. **In the given sentence, identify the segment which contains the grammatical error.**

My mother generally read the local newspaper to keep abreast of the local news.

- (a) the local newspaper
- (b) of the local news
- (c) My mother generally read
- (d) to keep abreast

92. **Select the most appropriate option to fill in the blank.**

It is claimed that if you take a certain homeopathic medicine, it will you against the corona virus.

- (a) shelter
- (b) immune
- (c) reinforce
- (d) fortify

93. **Select the most appropriate synonym of the given word.**

WRY

- (a) straight
- (b) frank
- (c) forthright
- (d) crooked

94. **Select the most appropriate ANTONYM of the given word.**

SUSTENANCE

- (a) refreshment
- (b) livelihood
- (c) starvation
- (d) nourishment

95. **Select the incorrectly spelt word.**

- (a) superior
- (b) superstition
- (c) superflous
- (d) supreme

96. **Select the most appropriate meaning of the given idiom.**

Under wraps

- (a) under estimate
- (b) double layered
- (c) secretly
- (d) underhand

97. **Select the option which means the same as the group of words given.**

A government run by the wealthy people

- (a) oligarchy
- (b) monarchy
- (c) plutocracy
- (d) aristocracy

98. **Select the correct passive form of the given sentence.**

The Central Board of Secondary Education has launched a new helpline for students.

- (a) A new helpline for students is launched by the Central Board of Secondary Education
- (b) A new helpline for students will be launched by the Central Board of Secondary Education
- (c) A new helpline for students had been launched by the Central Board of Secondary Education
- (d) A new helpline for students has been launched by the Central Board of Secondary Education

99. **Select the correct indirect form of the given sentence.**

Anju said to Vijaya, "You can stay with us whenever you are in Delhi."

- (a) Anju told Vijaya that she could stay with them whenever she was in Delhi
- (b) Anju told Vijaya that she could stay with them whenever you were in Delhi
- (c) Anju told Vijaya that she can stay with us whenever she is in Delhi
- (d) Anju told Vijaya that you can stay with us whenever you are in Delhi

100. **Given below are four jumbled sentences. Out of the given options. pick the one that gives their correct order.**

1. He lived in a small house near the main road of a village
2. As both, he and his wife, worked hard, they made a small fortune
3. But one thing caused them great sorrow: they had no children
4. After he got married, he started a tailor's shop

- (a) 1243
- (b) 2413
- (c) 1423
- (d) 2134

SOLUTION : PRACTICE SET-01

ANSWER KEY

1. (b)	11. (b)	21. (b)	31. (b)	41. (d)	51. (b)	61. (d)	71. (c)	81. (d)	91. (c)
2. (a)	12. (a)	22. (b)	32. (d)	42. (c)	52. (b)	62. (b)	72. (a)	82. (c)	92. (d)
3. (b)	13. (d)	23. (a)	33. (b)	43. (c)	53. (b)	63. (b)	73. (c)	83. (c)	93. (d)
4. (c)	14. (b)	24. (b)	34. (c)	44. (b)	54. (d)	64. (b)	74. (b)	84. (a)	94. (c)
5. (b)	15. (d)	25. (c)	35. (b)	45. (c)	55. (d)	65. (a)	75. (b)	85. (c)	95. (c)
6. (d)	16. (d)	26. (a)	36. (a)	46. (a)	56. (a)	66. (b)	76. (d)	86. (a)	96. (c)
7. (b)	17. (b)	27. (d)	37(a&c)	47. (b)	57. (d)	67. (b)	77. (d)	87. (b)	97. (c)
8. (c)	18. (a)	28. (c)	38. (a)	48. (c)	58. (b)	68. (b)	78. (c)	88. (b)	98. (d)
9. (c)	19. (d)	29. (c)	39. (b)	49. (a)	59. (b)	69. (d)	79. (c)	89. (d)	99. (a)
10. (d)	20. (b)	30. (c)	40. (a)	50. (c)	60. (a)	70. (d)	80. (b)	90. (a)	100.(c)

SOLUTION

1. (b)

Shells of soft gelatin capsule are made elastic by adding "sorbitol". A soft gel or soft gelatin capsule is a solid capsule (outer shell) surrounding a liquid or semisolid centre (inner fill). An active ingredient can be incorporated into the outer shell, the inner fill or both soft gel shells are a combination of gelatin, water, opacifier and plasticizer such as glycerine and "Sorbitol".

2. (a)

Triple roller mill is one of the equipment used for mixing purposes in various industries. It is a machine that uses shear force created by three horizontally positioned rolls rotating in opposite direction and at different speeds relative to each other in order to mix refine, disperse or homogenize viscous materials fed into it.

3. (b)

Ayurvedic dosages from are classified into four groups.

- Solid dosage forms: Pills, Gutika, Vatika.
- Semi- solid dosage forms : Paka, Avleha, Lepa Ghrita.
- Liquid dosage forms : Asava, Arishta, Arka, Taila, Dravaka.
- Powder Dosage forms : Bhasma, Satva, Mandura, Pisti.
- Parpati, Lavana, Kshara, Churna.

4. (c)

Dry heat at 100°C for 60 minutes (1 hour) kills vegetable bacteria which are susceptible to moist heat at 60°C in 30 minute. High content of organic substances protect spores and vegetative forms against lethal action of heat.

5. (b)

Filter Press- Filtration is a valuable and necessary aspect of any pharmaceutical system. The separation of solid from liquid by means of a porous medium that retains the solid but allows the Fluid to pass.

Advantage—

- It aims to clarify liquid purification.
- It aims to separate the solid.
- It provides large surface area.
- Filter media can be used repeatedly.
- High filtration pressure can be used.
- **Except—** Filter Press is not a continuous process.

6. (d)

The term HEPA means "High- Efficiency Particulate Air" sometimes called "High Efficiency Particulate Arrestance" and what that's basically means- It's a special kind of filter that captures microscopic particles.

7. (b)

Colchicine is a natural alkaloid derived from two plants of the Liliaceae family, Colchicum autumnale and Gloriosa superba, that was first recommended for the treatment of gout in the sixth century. It remains widely in use today for the treatment of acute gout.

8. (c)

Cardiac glycosides are medicines that can help people with certain heart conditions. Cardiac glycosides examples include, digoxin (cardoxin® and Lanoxin®), digitalis and digitoxin. They come from the digitalis (foxglove) plant, which is where they get their names. Other cardiac glycoside drugs include oleandrin, bufalin and ouabain. Digoxin is the most commonly prescribed cardiac glycoside.

- The chief chemical constituents of strophanthus are cardiac glycosides. The amount of cardiac glycosides present in strophanthus is 8-10%. K-strophanthin is the cardiac glycosides present in the strophanthus. It is the mixture of three glycosides which are cymarin, K-strophanthin, P and K-strophanthoside.
- Strophanthus is a genus of flowering plants in the family Apocynaceae.

9. (c)

Hyoscyamine is a tropane alkaloid and a deliriant, which is a commonly extracted from plants in the Solaceae or nightshade family.

Synthetic compounds such as diphenhydramine (Benadryl) and dimenhydrinate (Dramamine) are also deliriants.

10. (d)

Catechu is an herb. The leaves, shoots, and wood are used to make medicine. Catechu is used for diarrhea, dysentery, swelling of the nose and throat etc.

11. (b)

Catharanthus roseus is a genus of flowering plants in the family Apocynaceae, like the genus Vinca they are known as periwinkles.

⇒ Catharanthus roseus known formerly as Vinca roseus is a main source of vinca alkaloids, now sometimes called catharanthus alkaloids.

12. (a)

Ferulic acid is a phenolic acid present in asafoetida which exhibits numerous activities such as an anticancer, antioxidant and others.

13. (d)

A vitamin is the organic molecule which is the essential micronutrient.

- Vitamin K is the fat soluble vitamin. Vitamin K helps in blood clotting. It is found in various food items like spinach, kale, broccoli, carrots etc. Its chemical name is phylloquinone.
- Vitamin A is a fat-soluble which is also known with the name of Retinol. It helps in improving eyesight and night vision.
- Vitamin B is a water - soluble vitamin that helps in improving the immunity of the body.
- Vitamin D is necessary for promoting bone growth.

14. (b)

The residue obtained after heating, called the anhydrous compound, will have a different structure and texture and may have a different color than the hydrate.

Any anhydrous compound from a hydrate generally has the following properties:

- Highly soluble in water.
- When dissolved in water, the anhydrous compound will have a color similar to that of the original hydrate even if it had changed color going from the hydrate to the anhydrous compound.
- Most hydrates are stable at room temperature.
- Formula of a hydrate (Anhydrous solid \times H_2O),

$$x = \frac{nH_2O}{n \text{ Anhydrous Solid}}$$

15. (d)

A solvent is a liquid that is used to dissolve the reactants of a chemical reaction there are two different categories into which the solutes can be categorized as polar solvents and non polar solvents. Those that have a net resultant dipole moment are called "polar solvents", while those solvents that do not have polarity are called "non - polar solvents."

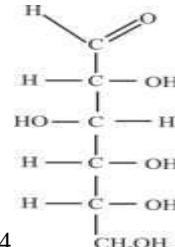
- Examples of polar solvents are water, alcohols, low molecular weight carboxylic acids etc.
- Examples of non-polar solvents include hydrocarbons with 5 to 10 carbon atoms.
- The polar aprotic solvents are those that do not contain N- H bonds and O-H bonds and therefore cannot form intramolecular or intermolecular hydrogen bonds.

16. (d)

Molecular formula of glucose is $C_6H_{12}O_6$.

- In the structure of glucose, we see that carbon atoms 2,3,4 and 5 are chiral centres.

The maximum number of optical isomers is 2^n , where 'n' is the number of chiral centres.



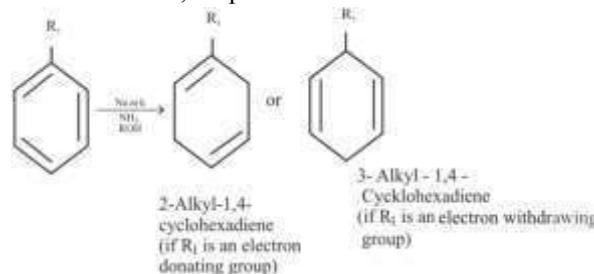
In glucose, $n = 4$

D- isomers of glucose.

So, $2^n = 2^4 = 16$ Possible isomers.

17. (b)

Birch reduction is an organic redox reaction that is used to convert aromatic compounds into dienes. The reaction is carried out by sodium or potassium metal dissolved in liquid ammonia in the presence of alcohol. Two hydrogen atoms are added at the opposite ends of the molecule at 1, 4 - positions.

**18. (a)**

Crystallization is the (natural or artificial) process of solid crystal precipitating from a solution, melt or more rarely deposited directly from a gas.

- The crystallization process consists of two major events, nucleation and crystal growth.
- Crystallization is the process just after evaporation. During evaporation the clarified sugar cane juice is boiled in evaporators which remove most of the water leaving a thick syrup. Then in the crystallization process the syrup is boiled at low temperatures under partial vacuum and some seedings are added which causes the development and growth of sugar crystals and outcome is called massecuite (raw sugar crystals mixed with molasses). The sugar crystals and molasses are then separated in centrifugals.

19. (d)

There are 12 cranial nerves in our body, each having a particular function.

- Cranial nerve 3 is the oculomotor nerve which helps the movements of muscles of eyes.
- The vagus nerve variably referred to as the pneumogastric nerve. It is the longest cranial nerve. It is the 10th cranial nerve and interfaces with the lungs, heart, and stomach related tract.

20. (b)

The middle vesicle is the "mesencephalon" which is the precursor of midbrain structures, the most anterior of these embryonic brain vesicles is called the "Prosencephalon" which is the embryonic precursor of the forebrain, and the most posterior is the "rhombencephalon" which will become the hindbrain.

21. (b)

Urea is formed in our body during nitrogen metabolism the hepatic cells in the liver. Urea is an excretory product and it enters into the blood, after its formation in the liver, when blood reaches the kidney, which filters it out from the blood and hence excretes urea out through the urine.

22. (b)

Bile is an aqueous liquid solution produced in the liver. It consists mainly bile salts, conjugated bilirubin with some electrolytes and water.

23. (a)

Congestive heart failure is a long term condition that happens when your heart can't pump blood well enough to give our body a normal supply of blood and fluids collect in our lungs and legs over time medications and other treatments.

24. (b)

Recurrent episodes of acute shortness of breath typically occurring at night or the early morning hours, are the cardinal manifestation of bronchial asthma, further symptoms include cough wheezing and feeling of tightness in the chest.

25. (c)

Alcoholic fermentation is also called ethanol fermentation. Alcoholic fermentation is a complex process.

The *Saccharomyces* is a species of yeast which is used in the beer and wine making process. It is a genus of fungi. The members of this genus are considered very important for food production. It is also called baker's yeast. The *Saccharomyces cerevisiae* is used in making wine, bread and beer. *Acetobacter aceti* is used in the production of vinegar.

- *Clostridium butylicum* is used in the synthesis of butyric acid.
- *Penicillium notatum* is used to produce the antibiotic penicillin.

26. (a)

Leptospirosis is a bacterial infection. It is caused due to the infection occurred by the presence of a bacteria of the genus *Leptospira*. It produces various kinds of symptoms in humans and animals.

27. (d)

Morbidity refers to having a disease or a symptom of disease, or it represents the state of disease or it represents the state of being unhealthy for a particular disease or situation. Incidence rate of occurring the

disease is one of the indicator of morbidity. Actually the morbidity rate can refer to either the incidence rate, or the prevalence of a disease or medical condition.

28. (c)

The main epidemiological indicators of measuring the tuberculosis problem in community, are incidence, prevalence and mortality are these there. Morbidity is not an index for this purpose, but notification rate is an epidemiological index for it.

29. (c)

Health indicator is a variable susceptible to direct measurement, that reflects the state of health of the subjects in a community. characteristics of health indicators-

- Valid
- Reliable
- Sensitive
- Specific
- Feasible
- Relevant

30. (c)

The traditional triangle of epidemiology consists of an external agent, a susceptible host and an environment which becomes the cause of associating the host agent together.

31. (b)

Gelatin is a protein made from animal collagen, usually from cows and pigs. It's commonly used to make capsules, cosmetics, ointments and foods. It is commonly utilized as a gelling agent.

- It was selected as encapsulating material because being commonly used as a food ingredient it possesses unique gelling properties and is commercially available at a low cost.

32. (d)

The Carr's index is an indicator of the compressibility of a powder. It is named after the scientist Raph J. Carr, Jr. The Carr index is calculated by the formula,

$$C = 100 \frac{PT - PB}{PT}$$
, where PB is the freely, settled bulk

density of the powder, and PT is the tapped bulk density of the powder after tapping down. It can also be expressed as, $C = 100 \left(1 - \frac{PB}{PT} \right)$.

- A Carr's index greater than 25 is considered to be an indication of poor flow ability, and below 15 of good flow ability and Excellent/Very free flow for Carr's index is $\leq 10\%$.

33. (b)

The abbreviation for b.i.d is bis in die which in Latin means twice a day, and oculet is the term for eye medicine. Therefore, Oculet. Ciprofloxacin 0.3% b.i.d represents pharmacist's instruction as twice a day, apply on the eyes.

34. (c)

Fluid thioglycolate media is used for the detection of both aerobes and anaerobes. In the fluid thioglycolate solution it has been found that aerobes grow at upper surface as they require oxygen and on the other hand anaerobes grow at the bottom of the solution because they can grow without oxygen.

35. (b)

Dose calculation based on body surface area is depicted by Crawford Terry Rourke's method. It provides simplification method of drug dosage calculation by application of the surface Area Principle.

36. (a)

Selenium sulphide (SeS_2) is used for treating dandruff. It is an anti-infective agent, relieves itching, flaking of the scalp and removes the dry, scaly particles that are commonly known as dandruff. Selenium sulfide is also used to treat tinea versicolor, a fungal infection of the skin.

37. (a&c)

Griseofulvin is an antifungal antibiotic. It is effective in treatment of candida as well as fungus infection in, scalp, groin, thighs, skin, fingernails and toenails etc. Griseofulvin dose not largely excrete through the feces about 10% - 50% of this medicine excreted exclusively as metabolites in the urine.

38. (a)

Hamycin is a heptaene antifungal antibiotic produced by Streptomyces pimprina thirum. It has potent in vitro antifungal activity against wide range of pathogenic fungi and has therapeutic efficiency in mice infected with a variety of yeast and yeast like and filamentous fungi, such as- *Candida albicans*, *Cryptococcus neoformans*, *Histoplasma capsulatum*, *Blastomyces dermatitidis* and *Aspergillus niger*.

39. (b)

Tranexamic acid is an anti-fibrinolytic agent. It works by blocking the break down of blood clots which prevents bleeding.

40. (a)

NH_4Cl is an inorganic compound with the chemical name ammonium chloride it is also known as sal ammoniac the salt of ammonia and hydrogen chloride. Ammonium chloride is a by-product of sodium carbonate, Ammonium chloride has diuretic and expectorant effects.

41. (d)

The reduced bronchodilation by a beta-2(β -2) agonist prescribed with a non-selective beta-blocker is an example non-selective beta-blocker is an example of pharmacodynamic drug interaction.

42. (c)

Levosimendan enhances the sensitivity of the heart to calcium, thereby increasing the force of contraction without significantly increasing oxygen demand.

43. (c)

Dapagliflozin causes hypoglycemia by increasing glucose excretion in urine.

Dapagliflozin is sodium Glucose cotransport-2 (SGLT-2) inhibitor. By inhibiting SGLT-2 dapagliflozin blocks reabsorption of filtered glucose in the kidney, increasing urinary glucose excretion and reducing blood level. In this way dapagliflozin reduces sugar level in blood with pancreatic β -cell function and independent of insulin modulation.

44. (b)

Ivermectin exerts its anthelmintic action through activation of glutamate gated Cl^- channel. The standard theory of its anthelmintic and insecticidal mode of action is that it is a selective positive allosteric modulator of glutamate gated chloride channels found in nematodes and insects.

45. (c)

Aliskiren is a class of medicine that comes into the category of direct renin inhibitors. It works by decreasing certain natural chemicals that tighten the blood vessels, and relaxes the blood vessels and treats the high blood pressure problem.

46. (a)

The pharmacy council of India is constituted by the central government.

The Pharmacy Council of India (PCI) is a statutory the ministry of Health and Family Welfare Government of India. It is constituted under the pharmacy Act, 1948 to regulate pharmacy education and the practice of the profession in the country.

47. (b)

Central Drug testing laboratory is one of the seven National Laboratories in India engaged in the research and analysis of drugs and cosmetics as per Drug and Cosmetics Act 1940

48. (c)

India's first Central Drug Laboratory was established at Kolkata.

It is established under the Indian Drug and Cosmetic Act 1940 and represents nation's statutory laboratory for quality control of drugs and cosmetics.

49. (a)

Under the Medicine and Cosmetics Act 1940 and rules 1945, the rights of medicine superintendents have been provided Section 22.

50. (c)

Drug & cosmetics Rules have been divided into 18 parts each dealing with a particular subject. There are 2 Schedules to the Act and 26 schedules to the rules.

51. (b)

Good manufacturing practice (GMP) is a system for ensuring that products are consistently produced and controlled according to quality standards. 5 main components of GMP are products, people, processes , procedures, premises.

52. (b)

The drug store should have adequate space for storage of drugs with proper lighting ventilation and temperature controls, or a general storage condition under which a substance or product is stored. Criteria for storage conditions may for example include temperature, humidity brightness atmospheric pressure and so on.

53. (b)

Manufacturer makes the goods and sells them to the consumer directly with no intermediary such as a manufacturer to use with out an intermediary or middleman . For example a farmer may sell some product directly to customers.

54. (d)

Overdraft in banking services refers to allowing the account holder to continue withdrawing money even when the account has no funds in it. Basically, an overdraft means that the bank allows customers to borrow a set amount of money.

55. (d)

The first step of patient counseling after meeting the patient is to tell about medicines and their importance i.e. patient should recognise the importance of medications for his well being.

56. (a)

350 square feet required in the 100 beds capacity hospital.

57. (d)

A type of clinical trial that studies the side effects caused over time by a new treatment after it has been approved and is on market. These trials look for side effects that were not seen in earlier trials and may also study how well a new treatment works over a long period of time. Post marketing trials studies conducted after the launch of a product are part of Phase IV development of the drug.

58. (b)

Sterility testing of surgical suture material requires incubation period for at least 14 days at the specified incubation temperature.

59. (b)

The first hospital formulary for a Government teaching hospital in India was published in 1997 at Government medical college and hospital, Trivandrum (Thiruvananthapuram).

60. (a)

Dapsone is sulphone related to the sulfonamides and acts similarly by inhibiting folate synthesis by dihydropteroate synthase. It is the most active drug against leprosy.

61. (d)

अंग्रेजी शब्दकोश के अनुसार शब्दों का क्रम निम्नवत् है-

(2) movement (4) moviemaker (1) multifocal (3) multinomial (5) mutual fund

62. (b)

प्रश्नानुसार कागज को मोड़कर काटने के बाद खोलने पर उत्तर आकृति विकल्प (b) जैसा दिखाई देगा।

63. (b)

जिस प्रकार,

$$(12)^2 + \frac{12}{2} = 144 + 6 = 150$$

उसी प्रकार,

$$(14)^2 + \frac{14}{2} = 196 + 7 = 203$$

64. (b)

जिस प्रकार,

HAMPER – 17212322036

Odd places – H, M, E

Even places – A, P, R

$$H \rightarrow 8 \Rightarrow 25 - 8 = 17$$

$$A \rightarrow 1 \times 2 = 2$$

$$M \rightarrow 13 \Rightarrow 25 - 13 = 12$$

$$P \rightarrow 16 \Rightarrow 16 \times 2 = 32$$

$$E \rightarrow 5 \Rightarrow 25 - 5 = 20$$

$$R \rightarrow 18 \Rightarrow 18 \times 2 = 36$$

तथा, INSULT – 16286421340

उसी प्रकार,

SAFETY

Odd places – S, F, T

Even places – A, E, Y

$$S \rightarrow 19 \Rightarrow 25 - 19 = 6$$

$$A \rightarrow 1 \Rightarrow 1 \times 2 = 2$$

$$F \rightarrow 6 \Rightarrow 25 - 6 = 19$$

$$E \rightarrow 5 \Rightarrow 5 \times 2 = 10$$

$$T \rightarrow 20 \Rightarrow 25 - 20 = 5$$

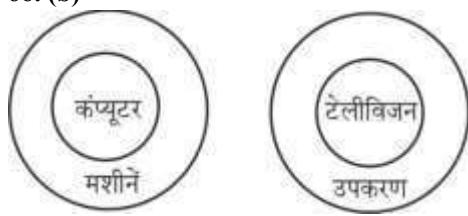
$$Y \rightarrow 25 \Rightarrow 25 \times 2 = 50$$

अतः SAFETY का कोड = 621910550 होगा।

नोट:- अक्षरों में विषम क्रम के अक्षरों के क्रमांक को 25 से घटाया गया है जबकि सम क्रम के अक्षरों के क्रमांक को 2 से गुणा किया गया है।

65. (a)

जिस प्रकार 'तिनका' से 'घोसला' बनाया जाता है। उसी प्रकार 'कपास' से 'धागा' बनाया जाता है।

66. (b)

निष्कर्ष:-

(i) कुछ उपकरण, मशीने हैं। (X)

(ii) कुछ मशीनें, कंप्यूटर हैं। (✓)

(iii) कुछ टेलीवीजन, मशीने हैं। (✗)

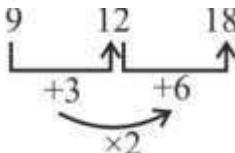
अतः केवल निष्कर्ष (ii) अनुसरण करता है।

67. (b)

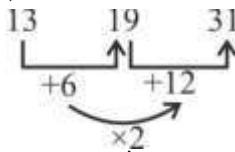
जिस प्रकार, विद्युत धारा को ऐमीटर से मापते हैं। उसी प्रकार आर्द्रता को हाइग्रोमीटर से मापते हैं।

68. (b)

जिस प्रकार,



उसी प्रकार,



अतः विकल्प (b) सही है।

69. (d)

दिए गए विकल्पों में से उपर्युक्त शृंखला में प्रश्नचिह्न के स्थान पर उत्तर विकल्प (d) की आकृति होगी।

70. (d)

दिए गए प्रश्न आकृति के दार्यों और दर्पण रखने पर उत्तर आकृति विकल्प (d) की छवि प्राप्त होगी।

71. (c)

1857 का भारतीय विद्रोह, जिसे प्रथम भारतीय स्वतंत्रता संग्राम, सिपाही विद्रोह और भारतीय विद्रोह के नाम से जाना जाता है, ब्रिटिश शासन के विरुद्ध एक सशस्त्र विद्रोह था। यह विद्रोह दो वर्षों तक भारत के विभिन्न क्षेत्रों में चला। इस विद्रोह का आरम्भ छावनी क्षेत्रों में छोटी झड़पों तथा आगजनी से हुआ था। परन्तु जनवरी मास तक इसने एक बड़ा रूप ले लिया था विद्रोह का प्रभावी रूप से अन्त ग्वालियर में रानी लक्ष्मीबाई के हार के साथ हुआ। सन् 1857 के विद्रोह के विभिन्न राजनैतिक, आर्थिक, धार्मिक, सैनिक तथा सामाजिक कारण बताये जाते हैं।

72. (a)

एम. एन. रॉय 1934 में भारत के लिये संविधान सभा की मांग करने वाले पहले व्यक्ति थे। एक साल बाद, भारतीय राष्ट्रीय कांग्रेस ने भारत के लिये संवैधानिक सुधारों पर एक बिटिश प्रस्ताव (शेत पत्र) को खारिज करने वाले एक प्रस्ताव में इसे एक औपचारिक मांग बना दिया - जो बाद में भारत सरकार अधिनियम 1935 बन गया। भारतीय संविधान सभा का निर्माण 'भारत के संविधान' की रचना के लिये किया गया था। संविधान सभा की कारवाई 13 दिसम्बर, 1946 ई0 को जवाहर लाल नेहरू द्वारा पेश किये गये एक उद्देश्य प्रस्ताव के साथ प्रारम्भ हुई।

73. (c)

वर्षण या अवक्षेपण एक मौसम विज्ञान की प्रचलित शब्दावली है जो वायुमण्डलीय जल के संघनित होकर किसी भी रूप में पृथ्वी की सतह पर वापस आने को कहते हैं। वर्षण के कई रूप हो सकते हैं,

जैसे- वर्षा, फुहर, हिमवर्षा, हिमपात और ओलावृष्टि इत्यादि। ऊपर उठती गर्म एवम् आर्द्र वायु के संतृप्त होने तथा ओसांक की प्राप्ति के बाद संघनन होने पर वायुमण्डलीय जलवाष्य के या तो तरल रूप (ओस, जल वर्षा) या ठोस रूप (हिमपात) में नीचे गिरने को वर्षण कहते हैं।

74. (b)

भारत का संविधान (12वाँ संशोधन) अधिनियम, 1962 भारत के संविधान के अनुसूची एक में संशोधन किया गया है। इस संशोधन के द्वारा गोवा, दमन और दीव को केन्द्रशासित प्रदेश के रूप में शामिल किया गया और इस प्रयोजन के लिये अनुच्छेद 240 का संशोधन किया गया।

75. (b)

भारत सरकार ने 24 दिसंबर को राष्ट्रीय उपभोक्ता दिवस घोषित किया है, क्योंकि भारत के राष्ट्रपति ने उसी दिन ऐतिहासिक उपभोक्ता संरक्षण अधिनियम, 1986 के अधिनियम को स्वीकारा था। इसके अतिरिक्त 15 मार्च को प्रत्येक वर्ष विश्व उपभोक्ता अधिकार दिवस के रूप में मनाया जाता है। भारत में यह दिवस पहली बार वर्ष 2000 में मनाया गया और आगे भी प्रत्येक वर्ष इसे मनाया जाता है।

76. (d)

पीएच या pH, किसी विलयन की अम्लता या क्षारकता का एक माप है। इसे द्रवीभूत हाइड्रोजन आयनों (H^+) की गतिविधि के सह-लघुगुणांक (कालोगारिदम) के रूप में परिभाषित किया जाता है। हाइड्रोजन आयन के गतिविधि गुणांक प्रयोगात्मक रूप से नहीं मापा जा सकता है। इसलिये वे सैद्धान्तिक गणना पर आधारित होते हैं। अम्ल का pH मान 7 से कम होता है।

77. (d)

एल्युमिनियम की एक मोटी ऑक्साइड परत बनाने की प्रक्रिया को एनोडाइजिंग के रूप में जाना जाता है। इस प्रक्रिया को एनोडाइजिंग कहा जाता है, क्योंकि प्रयोग किया जाने वाला हिस्सा इलेक्ट्रोलाइटिक सेल के एनोड इलेक्ट्रोड बनाता है। एनोडाइजिंग एक विद्युत रासायनिक प्रक्रिया है, जो धातु की सतह को एक सजावटी, टिकाऊ, संक्षारण प्रतिरोधी, एनोडिक ऑक्साइड फिनिस में परिवर्तित करती है।

78. (c)

पाइथन एक सामान्य कार्यों के लिये उपयुक्त, उच्चस्तरीय प्रोग्रामिंग भाषा इन्टरैक्टिव, ऑब्जेक्ट ओरिएन्टेड, स्क्रिप्टिंग भाषा है। इस भाषा को इस तरह से डिजाइन किया गया है, ताकि इसमें लिखे गये कोड आसानी से पढ़े और समझे जा सके। इस प्रोग्रामिंग भाषा को Guido Van Rossum ने 1991 में बनाया था।

79. (c)

काजिंद, भारत एवं कजाकिस्तान के बीच आयोजित होने वाला वार्षिक द्विपक्षीय सैन्य अभ्यास है। 'काजिंद 2024' के 8वें संस्करण का आयोजन 30 सितम्बर से 13 अक्टूबर के बीच उत्तराखण्ड के 'ऑली' में किया गया।

80. (b)

केन्द्रीय सूचना और प्रसारण मंत्रालय ने 54वें दादा साहब फाल्के पुरस्कार 2022 के विजेता के रूप में मिथुन चक्रवर्ती को चुना है। पिछले वर्ष दादा साहब फाल्के पुरस्कार 2021 के लिए वहीदा रहमान को चुना गया था।

अक्टूबर 2024 में राष्ट्रीय फिल्म महोत्सव पुरस्कार समारोह में 'मिथुन दा' को यह पुरस्कार प्रदान किया गया।

81. (d)

फरवरी माह में श्याम लाल की आय = 29×560

$$= 16240$$

पहले 16 दिनों की कुल आय = $16 \times 590 = ₹9440$

अंतिम 16 दिनों की कुल आय = $16 \times 500 = ₹8000$

∴ 14, 15 और 16 फरवरी को उसकी आय

$$= (9440+8000) - 16240$$

$$= 17440 - 16240 = ₹1200$$

अभीष्ट औसत आय = $\frac{1200}{3} = ₹400$

82. (c)

$a : b = 2 : 3$ (दिया है)

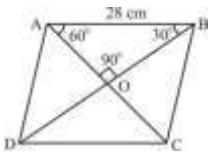
$$c : d = 5 \times 2 : 3 \times 3 = 10 : 9$$

तो, $2c : 5d = 10 \times 2 : 5 \times 9$

$$= 20 : 45$$

$$= 4 : 9$$

83. (c)



समकोण त्रिभुज, AOB में,

$$\sin 30^\circ = \frac{AO}{28}$$

$$\frac{1}{2} = \frac{AO}{28}$$

$$\therefore AO = 14 \text{ cm.}$$

60° के सामने की भुजा

$$\sin 60^\circ = \frac{BO}{28}$$

$$\frac{\sqrt{3}}{2} = \frac{BO}{28}$$

$$BO = 14\sqrt{3}$$

अतः बड़े विकर्ण की लम्बाई (BD) = $2 \times BO$

$$= 2 \times 14\sqrt{3} = 28\sqrt{3} \text{ cm}$$

84. (a)

∴ 15 दर्जन पेन का क्रय मूल्य = ₹1350

तो, 5 दर्जन पेन का क्रय मूल्य = ₹450

$$\text{तथा } 5 \text{ दर्जन पेन का विक्रय मूल्य} = \frac{1350}{15} \times 5 \\ = ₹495$$

$$\text{लाभ} = 495 - 450 = ₹45$$

$$\text{प्रतिशत लाभ} = \frac{45}{450} \times 100 = 10\%$$

अतः अभीष्ट प्रतिशत लाभ 10% होगा।

85. (c)

अंकित मूल्य = ₹800

$$\text{माना छूट} = x\%$$

प्रश्नानुसार,

$$800 \times \frac{(100-x)}{100} \times \frac{(100-x)}{100} = 512$$

$$8(100-x)^2 = 51200$$

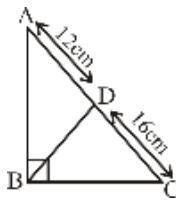
$$(100-x)^2 = 6400$$

$$100-x = 80$$

$$\therefore x = 20\%$$

अतः दी गई प्रतिशत छूट 20% है।

86. (a)



∴ BD, $\angle ABC$ का समद्विभाजक है।

$$\therefore \frac{BC}{AB} = \frac{16}{12} = \frac{4}{3} \text{ अर्थात् } BC = 4x, AB = 3x$$

समकोण ΔABC में,

$$AB^2 + BC^2 = 28^2$$

$$9x^2 + 16x^2 = 28^2$$

$$25x^2 = 28^2 \Rightarrow 5x = 28$$

$$x = 28/5$$

तब परिमाप = $AB + BC + CA$

$$= 3x + 4x + 28$$

$$= 7x + 28$$

$$= 7 \times \frac{28}{5} + 28 = 28 \left(\frac{12}{5} \right)$$

$$= 5.6 \times 12 = 67.2 \text{ cm}$$

87. (b)

माना $AO = x \text{ cm}$ तथा

तब $OB = (8-x) \text{ cm}$.

∴ $AO \times OB = CO \times OD$

$$x \times (8-x) = 4 \times 3.75$$

$$x \times (8-x) = 15$$

$$8x - x^2 = 15$$

$$x^2 - 8x + 15 = 0$$

$$x^2 - 5x - 3x + 15 = 0$$

$$x(x-5) - 3(x-5) = 0$$

$$(x-5)(x-3) = 0$$

यदि $(x-3) = 0$

$$\text{तो } x = 3$$

तथा यदि $x - 5 = 0$

$$\text{तो } x = 5$$

अतः छोटी भुजा (AO) की लम्बाई = 3 cm

88. (b)

माना पाइप की लम्बाई = h cm
 पाइप की आंतरिक त्रिज्या = $(12-3) = 9$ cm
 प्रश्नानुसार,

$$R = 12\text{cm}, r = 9\text{ cm},$$

$$\text{खोखले बेलन का आयतन} = \pi(R^2 - r^2)h$$

$$\pi(R^2 - r^2)h = 3564$$

$$\pi(12^2 - 9^2) \times h = 3564$$

$$h = \frac{3564 \times 7}{22 \times 21 \times 3} = 18\text{cm}$$

89. (d)

$$3 \cot \theta + \tan \theta - 2\sqrt{3} = 0$$

$$3 \cot \theta + \tan \theta = 2\sqrt{3}$$

$$\tan \theta + \frac{3}{\tan \theta} = 2\sqrt{3}$$

$$\text{L.H.S. में } \theta \text{ का मान } 60^\circ \text{ रखने पर}$$

$$\tan 60^\circ + \frac{3}{\tan 60^\circ}$$

$$\sqrt{3} + \frac{3}{\sqrt{3}} = \sqrt{3} + \sqrt{3} = 2\sqrt{3} \quad \left[\because \frac{3}{\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}} = \frac{3\sqrt{3}}{3} = \sqrt{3} \right]$$

LHS = RHS

अतः θ का अभीष्ट मान 60° होगा।

90. (a)

प्रश्नानुसार, $360^\circ = 5400$

$$1^\circ = \frac{5400}{360} = 15$$

कम्प्यूटरों की कुल संख्या का 25%

$$5400 \times \frac{25}{100} = 1350$$

$$99^\circ = 99 \times 15 = 1485$$

$\therefore 99^\circ$ को पाई चार्ट में मार्च महीने को प्रदर्शित करता है। अतः अभीष्ट उत्तर मार्च होगा।

91. (c)

उपरोक्त वाक्य में 'Read' के स्थान पर 'Reads' का प्रयोग उचित होगा क्योंकि वाक्य का subject (Mother) singular है अतः verb भी singular प्रयुक्त होगी।

Note - Present indefinite tense के assertive sentence में verb को singular बनाने के लिए उसमें s/es जोड़ते हैं।

Correct Sentence-

My mother generally reads the local newspaper to keep abreast of the local news.

92. (d)

उपरोक्त वाक्य के रिक्त स्थान में विकल्प (d) fortify (मजबूत करना) का प्रयोग होगा क्योंकि वाक्य में 'कोरोना वायरस से मजबूत बनाने' का भाव प्रकट हो रहा है। अन्य विकल्पों के अर्थ भिन्न हैं।

Shelter - आश्रय,

Immune - प्रतिरक्षा,

Reinforce - सुदृढ़

Correct Sentence -

It is claimed that if you take a certain homeopathic medicine, it will fortify you against the corona virus.

93. (d)

Wry - (टेढ़ा), Synonym, Crooked - (वक्र/मुड़ा हुआ)। अन्य विकल्पों के अर्थ-

Straight - सीधा, Forthright - निष्कपट, Frank - स्पष्टवक्त

94. (c)

Sustenance - (जीविका/भरण पोषण), Antonym, Starvation - (भुखमरी/अकाल)। अन्य विकल्पों के अर्थ-

Nourishment-पोषण, Livelihood-जीविका, Refreshment-ताजगी

95. (c)

उपरोक्त विकल्पों में से विकल्प (c) superfluous की वर्तनी अशुद्ध है इसकी शुद्ध वर्तनी Superfluous (अतिरिक्त) होगी। अन्य विकल्पों की वर्तनी शुद्ध है।

Superstition-अंधविश्वास, Supreme-उच्चतम, Superior-बेहतर

96. (c)

उपरोक्त Idiom, 'Under wraps' (चुपके से) के लिए विकल्प (c) secretly उपयुक्त व्याख्या करता है। अन्य विकल्पों के अर्थ भिन्न हैं।

97. (c)

उपरोक्त group of words 'A government run by the wealthy people' के लिए उपयुक्त विकल्प (c) Plutocracy (धनिक तंत्र) होगा। अन्य विकल्पों के अर्थ भिन्न हैं-

Monarchy - राज-तंत्र, Oligarchy - कुलीन तंत्र, Aristocracy - शिष्ट जन

98. (d)

उपरोक्त वाक्य में has + v₃ के प्रयोग से स्पष्ट है कि वाक्य Present perfect tense का Active voice है इसका passive structure निम्न होगा।

A.V. - Sub + has/have + V₃ + Object + Others

P.V. - Object + has/have + been + V₃ + by + Subject + Others.

Correct Passive form -

A new helpline for students has been launched by the Central Board of Secondary Education.

99. (a)

उपरोक्त Direct speech का Reported speech assertive sentence में है, इसको indirect में परिवर्तित करने के लिए निम्न नियम प्रयुक्त होगा।

(i) Comma, inverted comma के स्थान पर conjunction 'that' का प्रयोग।

(ii) Reporting verb 'said to' को told में परिवर्तित करेंगे।

(iii) Narration Rule के अनुसार tense व Pronoun में परिवर्तन करेंगे।

Correct indirect form -

Anju told Vijaya that she could stay with them whenever she was in Delhi.

100. (c)

उपरोक्त Jumbled sentence का उचित अनुक्रम विकल्प (c) 1423 होगा।

PRACTICE SET-02

1. The term Capsule is derived from 'CAPSULA' which is a.
 (a) Greek term (b) Spanish term
 (c) Latin term (d) French term

2. Hydroxypropyl methyl cellulose can be used for/as
 (a) Diluent (b) Superdisintegrant
 (c) Lubricant
 (d) Making empty capsule shell (vegetarian)

3. The polymer used for enteric coating of tablets is
 (a) Ethyl cellulose
 (b) Polyethylene glycol
 (c) Hydroxy propyl cellulose
 (d) Polyvinyl Acetate phthalate

4. Which test is performed to assess the ability of the tablet to withstand abrasion in packaging, handling and transportation?
 (a) Hardness test (b) Friability test
 (c) Disintegration test (d) Dissolution test

5. The '0' size capsules can fill the volume of _____
 (a) 0.15 ml (b) 0.75 ml
 (c) 2.95 ml (d) 1.36 ml

6. Capsule are available in the form of both capsules and _____ capsules
 (a) Hard gelatin; soft gelatin
 (b) Compressed; hard gelatin
 (c) Phenyl, hygroscopic
 (d) Sugar coated; enteric coated

7. Morphine posses main nucleus
 (a) Naphthalene (b) Anthracene
 (c) Phenanthrene (d) Picene

8. Eugenol is present in
 (a) Fennel (b) Tulsi
 (c) Cardamom (d) Coriander

9. Adhatoda vasica is under the chemical class of which alkaloids
 (a) Quinazoline (b) Isoquinoline
 (c) Quinoline (d) Indole

10. The term ' Pharmacognosy' was first introduced by
 (a) Pelletier (b) Sertuener
 (c) Schmidt (d) Seydler

11. Ispaghula and sterculia prescribed in treatment of constipation act as
 (a) Bulk-forming laxatives
 (b) Stimulant laxatives
 (c) Stool softeners
 (d) All of these

12. Thick extracts of drugs prepared by boiling decoction of drug with sugar/honey is _____ ayurvedic dosage form.
 (a) Netrabindu (b) Asavas
 (c) Sattava (d) Avleha

13. Osmotic potential of pure water is
 (a) One
 (b) Zero
 (c) Less than zero
 (d) Between zero and one

14. Chlorocresol has following functional groups attached to it:
 (a) Two methyl groups, two hydroxyl groups and two chlorine
 (b) Two methyl groups, two hydroxyl group and one chlorine
 (c) Two methyl groups, one hydroxyl group and one chlorine
 (d) One methyl group, one hydroxyl group and one chlorine

15. Which of the following organisms is used in alcoholic fermentation ?
 (a) Pseudomonas (b) Aspergillus
 (c) Saccharomyces (d) Penicillium

16. Coenzyme FAD is derivative of
 (a) Adenine (b) Niacin
 (c) Thiamine (d) Riboflavin

17. Which sugar does not give a positive Benedict's test?
 (a) Sucrose (b) Lactose
 (c) Maltose (d) Glucose

18. Which of the following is not a lipid?
 (a) Wax (b) Protein
 (c) Fat (d) Oil

19. Sebaceous glands are
 (a) Apocrine (b) Mesocrine
 (c) Holocrine (d) None of these

20. An adult has _____ number teeth's of incisors in total.
 (a) 2 (b) 4
 (c) 6 (d) 8

21. Calcitonin is secreted by
 (a) Pituitary gland (b) Thyroid
 (c) Pancreas (d) Adrenal

22. Glomerular filtrate is equal to:
 (a) Serum + Plasma Proteins
 (b) Plasma
 (c) Blood – (RBCs – WBCs)
 (d) Blood – (Blood Cells + Plasma Proteins)

23. Tidal volume is equal to:
 (a) (Residual volume) + (Expiratory reserve volume)
 (b) (Total lung capacity) – (Vital capacity)
 (c) (Functional residual capacity) – (Expiratory reserve volume)
 (d) (Inspiratory capacity) – (Inspiratory reserve volume)

24. Nose, pharynx, windpipe, trachea and lungs are located in _____
 (a) Excretory system
 (b) Cardiovascular system
 (c) Renal system
 (d) Respiratory system

25. **Viruses have**
 (a) Prokaryotic nucleus
 (b) Single chromosome
 (c) Both DNA and RNA
 (d) DNA enclosed in a protein coat

26. **Typhoid is caused by**
 (a) Xanthomonas typhosus
 (b) Bacillus dysenterial
 (c) Salmonella typhi
 (d) Bacillus diplococcus

27. **Leishmania tropica produces**
 (a) Sleeping sickness (b) Kala-azar
 (c) Dysentery (d) Oriental sores

28. **Following is not a clinical feature of malaria :**
 (a) Chills and rigors (b) Myalgia
 (c) Anorexia (d) Cough

29. **The aim of scientific management is:**
 (a) Adequate supply
 (b) Quality control, increased production, cost reduction
 (c) Testing
 (d) Development

30. **Viable cells (viability assay) are assayed by all of the following methods except**
 (a) MTT/MTS/Resazurin assay
 (b) Apoptosis assay
 (c) ATP assay
 (d) Protease marker assay

31. **The following are sterile dosage forms except;**
 (a) Parenteral (b) Ophthalmic
 (c) Elixirs (d) None of these

32. **“Post cibum” means**
 (a) At bedtime (b) In morning
 (c) After meal (d) As needed

33. **Following equipments is not used for mixing of solids**
 (a) Tumbler mixer
 (b) Double cone blender
 (c) Air mixer
 (d) Paddle mixer

34. **Two solutions with the same osmolarity are**
 (a) Isotonic (b) Hypertonic
 (c) Hypotonic (d) None of these

35. **“hora somni” means**
 (a) With food (b) After meals
 (c) At morning (d) At bedtime

36. **Which of the following is an example of Anti-helminthic ?**
 (a) Chloroquine (b) Mebendazole
 (c) Acyclovir (d) Griseofulvin

37. **Astringent compound exhibit the following properties except :**
 (a) Styptic (b) Anti-inflammatory
 (c) Anti-perspirant (d) Anti-tussive

38. **Which of the following is used a oral anticoagulant?**
 (a) Desirudin (b) Dabigatran
 (c) Enoxaparin (d) Argatroban

39. **Leflunomide belongs to which category of drug?**
 (a) Antimalarial (b) Anticancer
 (c) DMARD (d) NSAIDs

40. **Which one of following antiepileptic drug is also used in bipolar disorder and as migraine prophylaxis?**
 (a) Vigabatrin (b) Phenytoin
 (c) Valproate (d) Rufinamide

41. **Chlorpromazine exerts antipsychotic action by**
 (a) Depleting stores of catecholamines
 (b) Inhibition of hypothalamic stimulation responses
 (c) Blocking postsynaptic dopamine receptors
 (d) Depleting stores of 5-Hydroxy tryptamine in brain

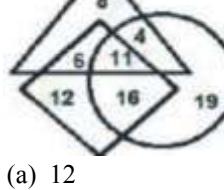
42. **Which of the following is not an action of amphetamine ?**
 (a) Potent CNS stimulation
 (b) Decreasing systolic and diastolic BP
 (c) Increased mental and physical activity
 (d) Reduces appetite

43. **Sympathetic blocking drug “guanethidine” acts by**
 (a) Depleting catecholamines
 (b) By interfering with synthesis of adrenergic transmitter
 (c) Interfering with transmission of impulse across postganglionic adrenergic neuron
 (d) By blocking adrenergic receptors

44. **Which of the following is not a muscarinic action of Acetylcholine ?**
 (a) Vasodilation
 (b) Increase in tone and activity of smooth muscle
 (c) Inhibition of gastric secretions
 (d) Decrease in heart rate

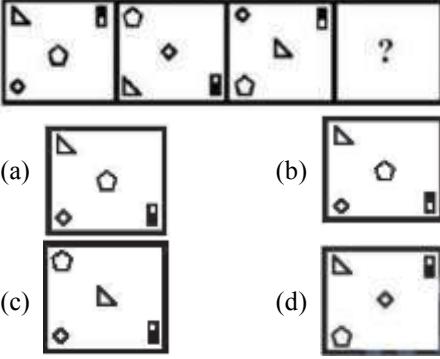
45. **Bleeding due to displacement of warfarin from protein-binding sites is a type of _____ drug interaction.**
 (a) oral antidiabetic (b) anticoagulant
 (c) antihypertensive (d) analgesic

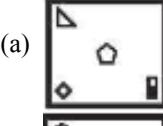
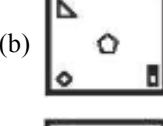
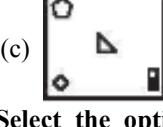
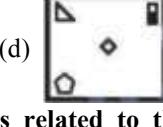
46. **Common medicine drink in official allopathic formulations is referred as _____**
 (a) Restricted preparations
 (b) Unrestricted preparations
 (c) Patent preparations
 (d) Proprietary preparations

47.	The schedule in Drug and Cosmetics Act that deals with requirement and guidelines of clinical trial, import and manufacture of new drugs is	57.	What are adverse drug reactions (ADRs) ?
	(a) Schedule O (b) Schedule M (c) Schedule F (d) Schedule Y		(a) The noxious and unintended effect of drugs which occurs at normal doses. (b) The synergistic effects that are seen when some drugs are administered concurrently. (c) Harmful chemical interactions between two drugs that are used to treat the same clinical symptoms. (d) Responses to increased drug doses required to achieve the same physiological outcome.
48.	Who is the current President of Pharmacy Council of India?	58.	The word “Ambulatory care” means
	(a) Dr. Montu M. Patel (b) Dr. B. Suresh (c) Dr. Pramod Yeole (d) Dr. Shailendra Saraf		(a) Emergency care (b) Outpatient care (c) In patient care (d) Both (A) and (B)
49.	CDSCO stands for	59.	Hospital acquired infections are called :
	(a) Central Drugs Standard Control Organisation (b) Central Drugs Supply Control Organisation (c) Central Drugs supervise Control Organisation (d) Central Drugs supervise-standard Control Organisation		(a) Primary Infection (b) Secondary Infection (c) Nosocomial Infection (d) Latent Infection
50.	Pharmacists are registered under the clause (i) and section (ii) of the pharmacy Act 1948, and their presence is legally required during the _____ of medicines according to Rule 65 (15) of the drugs and Cosmetics Rule 1945.	60.	Which of the following may be checked for evaluation of a patient reported outcome instrument ?
	(a) Compounding (b) Dispensing and selling (c) Both (Compounding Dispensing and Selling) (d) None of these		(a) Validity (b) Reliability (c) Ability to detect change (d) All of the above
51.	When the drug labeled is not in the prescribed manner, then it is deemed to be	61.	In the Venn diagram given below, if 'Rhombus' represents 'Psychologist', 'Triangle' represents 'Corporate Employees' and 'Circle' represents 'Fathers', then how many Psychologists are Corporate Employees but not Fathers?
	(a) Orphan Drug (b) Spurious Drug (c) Misbranded drug (d) Adulterated drug		नीचे दिए गए बेन आरेख में, यदि 'समचतुर्भुज' 'मनोवैज्ञानिक' को निरूपित करता है 'त्रिभुज' 'कॉर्पोरेट कर्मचारियों' को निरूपित करता है और 'वृत्त' 'पिता' को निरूपित करता है, तो कितने मनोवैज्ञानिक, कॉर्पोरेट कर्मचारी हैं, लेकिन पिता नहीं हैं?
52.	The advertisement of the drugs mentioned in schedule J is		
	(a) Prohibited (b) Permitted (c) Bonafide (d) Exempted		(a) 12 (b) 6 (c) 11 (d) 8
53.	According to Dual aspect concept	62.	Select the option in which the numbers are related in the same way as are the numbers of the following set.
	(a) Assets=Capital – Liabilities (b) Assets = Capital + Liabilities (c) Assets= Capital – 1/Liability (d) Assets = Capital + 1/Liability		उस विकल्प का चयन कीजिए जिसकी संख्याओं के मध्य वही संबंध है जो दिए गए समुच्चय की संख्याओं के मध्य है। (42, 14, 294)
54.	Refrigerator protects the food from contamination because		
	(a) At its low temperature bacteria & fungus become non-reactive. (b) Germs get died at this temperature. (c) Germs get freeze at this temperature. (d) It makes food free from germs.		
55.	Optic neuritis is a side effect of		
	(a) Sulphasalazine (b) Rifampicin (c) Ethambutol (d) Pyrazinamide		
56.	Which among the following is contra indicated in patients with eGFR less than 15mg/ml/ 1.75m ² ?		
	(a) Insulin (b) Metformin (c) Linagliptin (d) None of the above		

<p>(a) (21, 15, 205) (b) (36, 21, 360) (c) (30, 16, 242) (d) (34, 18, 306)</p> <p>63. Select the option that is related to the third number in the same way as the second number is related to the first number and the sixth number is related to the fifth number. उस विकल्प का चयन करें जो तीसरी संख्या से उसी तरह से संबंधित है जैसे दूसरी संख्या पहली संख्या से संबंधित है और छठी संख्या पाँचवीं संख्या से संबंधित है।</p>	<p>II. कोई पहिया, बस नहीं है। III. कुछ कारें, ट्रक हैं। (a) Both conclusions I and II follow निष्कर्ष I और II दोनों अनुसरण करते हैं। (b) All the conclusions follow सभी निष्कर्ष अनुसरण करते हैं। (c) Both conclusions II and III follow/निष्कर्ष II और III दोनों अनुसरण करते हैं। (d) Both conclusions I and III follow/निष्कर्ष I और III दोनों अनुसरण करते हैं।</p>
<p>3 : 65 :: 5 : ? :: 4 : 126 (a) 217 (b) 166 (c) 344 (d) 216</p> <p>64. Select the word-pair in which the two words are related in the same way as are the two words in the following word-pair: Language : Telugu उस शब्द-युग्म का चयन करें जिसके दोनों शब्द आपस में उसी तरह से संबंधित हैं जिस तरह से निम्नलिखित शब्द युग्म के दोनों शब्द आपस में संबंधित है।</p>	<p>Select the correct mirror image of the given combination when the mirror is placed at MN as shown. यदि दर्पण को चित्रानुसार MN पर रखा जाए, तो दिए गए संयोजन का दर्पण में निर्मित सही प्रतिबिंब चयनित कीजिए।</p>
<p>भाषा : तेलुगु (a) Society : Service/समाज : सेवा (b) Continent : Asia/महाद्वीप : एशिया (c) Vehicle : Mechanic/वाहन : मैकेनिक (d) Hindi : India/हिन्दी : भारत</p> <p>65. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.</p>	<p>Statements: All trucks are cars. No wheel is a car. No car is a bus. Conclusions: I. No bus is a truck. II. No wheel is a bus. III. Some cars are trucks. दिए गए कथनों और निष्कर्षों को ध्यानपूर्वक पढ़ें। यह मानते हुए कि कथनों में दी गई सूचना सत्य है, भले ही वह सामान्य रूप से ज्ञात तथ्यों से भिन्न प्रतीत होती हो, बताइए कि दिए गए निष्कर्षों में से कौन-से निष्कर्ष कथनों का तार्किक रूप से अनुसरण करते हैं।</p>
<p>Statements: All trucks are cars. No wheel is a car. No car is a bus. Conclusions: I. No bus is a truck. II. No wheel is a bus. III. Some cars are trucks. दिए गए कथनों और निष्कर्षों को ध्यानपूर्वक पढ़ें। यह मानते हुए कि कथनों में दी गई सूचना सत्य है, भले ही वह सामान्य रूप से ज्ञात तथ्यों से भिन्न प्रतीत होती हो, बताइए कि दिए गए निष्कर्षों में से कौन-से निष्कर्ष कथनों का तार्किक रूप से अनुसरण करते हैं।</p> <p>Kथन : सभी ट्रक, कार हैं। कोई पहिया, कार नहीं है। कोई कार, बस नहीं है। निष्कर्ष : I. कोई बस, ट्रक नहीं है।</p>	<p>66. Select the correct mirror image of the given combination when the mirror is placed at MN as shown. यदि दर्पण को चित्रानुसार MN पर रखा जाए, तो दिए गए संयोजन का दर्पण में निर्मित सही प्रतिबिंब चयनित कीजिए।</p> <p>8 F m w a p M N</p> <p>(a) d e a w m F 8 (b) q e w m F 8 (c) q e w m F 8 (d) q e w m F 8</p> <p>67. Select the option that is embedded in the given figure (rotation is not allowed). उस विकल्प का चयन कीजिए जो दी गई आकृति में सन्निहित है। (आकृति को घुमाने की अनुमति नहीं है)</p> <p>Diagram:</p> <p>(a) (b)</p> <p>(c) (d)</p> <p>68. In a certain code language, BACK is written as YEXP and MIXTURE is written as NOCGAII. How will FROGS be written in that language? एक निश्चित कूट भाषा में, BACK को YEXP लिखा जाता है और MIXTURE को NOCGAII लिखा जाता है उसी भाषा में, FROGS को क्या लिखा जाएगा?</p> <p>(a) UIUTH (b) UULTG (c) VIVTH (d) UILTG</p>

69. Select the figure that will replace the question mark (?) in the following figure series.
दिए गए विकल्पों में से उस आकृति का चयन कीजिए जो निम्नांकित आकृति श्रेणी में प्रश्नवाचक चिह्न (?) के स्थान पर आ सकती है।



(a)  (b) 
(c)  (d) 

70. Select the option that is related to the third word in the same way as the second word is related to the first word.
Africa : Algeria :: South America : ?
उस विकल्प का चयन कीजिए जिसका तीसरे शब्द से वही संबंध है, जो दूसरे शब्द का पहले शब्द से है :
अफ्रीका : अल्जीरिया :: दक्षिण अमेरिका : ?
(a) Argentina/अर्जेंटीना (b) Canada/कनाडा
(c) Germany/जर्मनी (d) Mexico/मैक्सिको

71. Who among the following begun his excavations at Dholavira in 1990?
निम्नलिखित में से किसने 1990 में धोलावीरा में खुदाई शुरू की थी?
(a) RS Bisht/आर. एस. विष्ट
(b) MS Vats/एम. एस. वत्स
(c) RD Banerji/आर. डी. बनर्जी
(d) SR Rao/एस. आर. राव

72. Who among the following is the author of the epic story 'Manu Charitra'?
निम्न में से महाकाव्य कहानी 'मनुचरित्र' के लेखक कौन है?
(a) Ponna/पोन्ना
(b) Allasani Peddana/अल्लासानी पेद्दना
(c) Banabhatta/बाणभट्ट
(d) Chand Bardai/चंदबरदाई

73. A _____ is a hydraulic structure of impervious material built across a river to create a reservoir on its upstream side for impounding water for various purposes.
_____ विभिन्न प्रयोजनों के लिए पानी की आपूर्ति के लिए नदी की धारा की दिशा में एक जलाशय बनाने के लिए उसके ऊर्ध्वप्रवाह निर्मित अभेद्य सामग्री की एक जलीय संरचना होता है।
(a) dam/बांध (b) block/ब्लॉक
(c) drainage/जल निकास (d) fold/फॉल्ड

74. A _____ helps serve as a set of rules and principles that all persons in a country can agree upon as the basis of the way in which they want the country to be governed.
.....नियमों और सिद्धांतों के एक समूह के रूप में सेवा करने में मदद करता है, जिस पर देश के सभी व्यक्ति उस देश के शासित होने के तरीके के आधार पर सहमत हो सकते हैं।
(a) draft/प्रसौदा (b) preamble/प्रस्तावना
(c) constitution/संविधान (d) document/डाक्यूमेंट

75. What was the contribution of the manufacturing sector in India's GDP in Q2 of 2020-21?
वर्ष 2020-21 की दूसरी तिमाही में भारत के सकल घरेलू उत्पाद (GDP) में विनिर्माण क्षेत्र (manufacturing sector) का क्या योगदान था?
(a) Positive growth of 3.4%
3.4% की धनात्मक वृद्धि
(b) Negative growth of 8.6%
8.6% की ऋणात्मक वृद्धि
(c) Positive growth of 0.6%
0.6% की धनात्मक वृद्धि
(d) Negative growth of 7.5%
7.5% की ऋणात्मक वृद्धि

76. CSIR as autonomous body is the largest research and development organisation in India. What does CSIR stands for?
CSIR स्वायत्त निकाय के रूप में भारत में सबसे बड़ा अनुसंधान और विकास संगठन है। CSIR का क्या अर्थ है?
(a) Council of Scientific and Industrial research
काउंसिल ऑफ साइंटिफिक एंड इंडस्ट्रियल रिसर्च
(b) Council of Space and Industrial Research
काउंसिल ऑफ स्पेश एंड इंडस्ट्रियल रिसर्च
(c) Centre of Space and Industrial Research
सेंटर ऑफ स्पेश एंड इंडस्ट्रियल रिसर्च
(d) Chamber of States and Industrial Research
चैंबर ऑफ स्टेट्स एंड इंडस्ट्रियल रिसर्च

77. Which fiber among the following is used to make rayon clothing?
रेयान कपड़ा बनाने के लिए निम्न में से किस फाइबर का उपयोग किया जाता है?
(a) Pectin/पेक्टिन (b) Cellulose/सेल्यूलोज
(c) Mucilage/म्यूसिलेज (d) Gum/गम

78. To which group of organic molecules does 'Manosaccharides' belong?
'मोनोसैकराइड्स (Manosaccharides)' कार्बनिक अणुओं के किस समूह से संबंधित है?
(a) Lipids/लिपिड
(b) Carbohydrates/कार्बोहाइड्रेट
(c) Nucleic acids/न्यूक्लिक अम्ल
(d) Proteins/प्रोटीन

79. In which state did Narendra Modi Inaugurate the Bidkin Industrial Area in September 2024? / सितम्बर 2024 में नरेन्द्र मोदी जी ने बिडकिन औद्योगिक क्षेत्र का उद्घाटन किस राज्य में किया?

(a) Uttar Pradesh/उत्तर प्रदेश
(b) Maharashtra/महाराष्ट्र
(c) Gujarat/गुजरात
(d) Goa/गोवा

80. In which category was Pura Mahadev Village of Uttar Pradesh awarded in the best Tourism Village competition 2024? / सर्वश्रेष्ठ पर्यटन ग्राम प्रतियोगिता 2024 में उत्तर प्रदेश के पुरा महादेव गांव को किस श्रेणी में पुरस्कृत किया गया?

(a) Lively Village category/जीवंत ग्राम श्रेणी
(b) Spiritual and Wellness category/आध्यात्मिक और कल्याण श्रेणी
(c) Heritage Category/विरासत श्रेणी
(d) Craft Category/शिल्प श्रेणी

81. The average of eighteen number is 42. The average of the last ten numbers is 40 and that of the first five numbers is 44. The seventh number is 6 less than the sixth and 7 less than the eighth number. The average of the sixth and the eighth number is:

अद्वारह संख्याओं का औसत 42 है। अंतिम दस संख्याओं का औसत 40 है और पहली पाँच संख्याओं का औसत 44 है। सातवीं संख्या, छठी संख्या से 6 कम और आठवीं संख्या से 7 कम है। छठी और आठवीं संख्याओं का औसत, है।

(a) 46.5 (b) 48
(c) 47.5 (d) 45

82. There are three numbers. If the ratio of the first to the second number is 2 : 7 and that of the second to the third number is 5 : 8, then the ratio of the first to the third number is:

तीन संख्याएँ दी गई हैं। यदि पहली और दूसरी संख्या का अनुपात 2:7 है तथा दूसरी और तीसरी संख्या का अनुपात 5:8 है, तो पहली और तीसरी संख्या का अनुपात ज्ञात करें।

(a) 7 : 8 (b) 1 : 4
(c) 5 : 28 (d) 5 : 7

83. As observed from the top of a lighthouse, 42 m high above sea-level, the angle of depression of a ship sailing directly towards it changes from 30° to 45° . The distance travelled by the ship during the period of observation is:

समुद्र-तल से 42 m ऊपर, एक प्रकाश स्तंभ (लाइटहाउस) के शीर्ष से अवलोकन करने पर, इसकी ओर सीधे आ रहे एक जहाज का अवनमन कोण 30° से 45° हो जाता है। अवलोकन की अवधि में जहाज द्वारा तय की गई दूरी ज्ञात करें।

(a) 42 (b) $42(1 - \sqrt{3})$
(c) $42(\sqrt{3} - 1)$ (d) $42(\sqrt{3} + 1)$

84. By selling 3 dozen oranges for ₹405, a trader loses 25%. How many oranges should he sell for ₹288 if he needs to earn a profit of 20% in the transaction?

₹405 में 3 दर्जन संतरे बेचकर किसी व्यापारी को 25% की हानि होती है। यदि वह सौदे में 20% का लाभ प्राप्त करना चाहता है, तो उसे ₹288 में कितने संतरे बेचने चाहिए?

(a) 18 (b) 15
(c) 12 (d) 16

85. The marked price of an article is ₹480. A person buys it at two successive discounts of 15% and 10%. He sells it at a profit of 25%. What is his profit (in ₹)?

किसी वस्तु का अंकित मूल्य ₹480 है। कोई व्यक्ति इस वस्तु को 15% और 10% की दो क्रमागत छूट पर खरीदता है। वह इस वस्तु को 25% लाभ पर बेचता है। उसका लाभ (₹ में) ज्ञात करें।

(a) 93.20 (b) 91.80
(c) 90.60 (d) 95.40

86. The perimeters of two similar triangles ABC and PQR are 156 cm and 46.8 cm, respectively. If BC = 19.5 cm and QR = x cm, then the value of x is:

दो समरूप त्रिभुजों ABC और PQR के परिमाप क्रमशः 156 cm और 46.8 cm हैं। यदि BC = 19.5 cm और QR = x cm है, तो x का मान ज्ञात करें।

(a) 6.75 cm (b) 5.85 cm
(c) 3.76 cm (d) 4.29 cm

87. Chords AB and CD of a circle intersect externally at P. If CD = 11.6, PD = 6.4 cm and PB = 7.2 cm, then AB (in cm) is equal to:

किसी वृत्त की जीवाएँ AB और CD, बाहर P पर प्रतिच्छेद करती हैं। यदि CD = 11.6 cm, PD = 6.4 cm और PB = 7.2 cm है, तो AB का मान (cm में) ज्ञात करें।

(a) 12 (b) 4.8
(c) 8.8 (d) 16

88. If the diameter of the base of a cone is 18 cm and its curved surface area is $424\frac{2}{7}\text{ cm}^2$, then its height will be: (Take $\pi = \frac{22}{7}$)

यदि किसी शंकु के आधार का व्यास 18 cm है और इसका बक्र पृष्ठीय क्षेत्रफल $424\frac{2}{7}\text{ cm}^2$ है, तो इसकी ऊंचाई ज्ञात करें। ($\pi = \frac{22}{7}$) लें

(a) 10 cm (b) 15 cm
(c) 12 cm (d) 14 cm

89. If $2\cos^2\theta = 3(1-\sin\theta)$, $0^\circ < \theta < 90^\circ$, then what is the value of $(\tan 2\theta + \operatorname{cosec} 3\theta - \sec 2\theta)$?
यदि $2\cos^2\theta = 3(1-\sin\theta)$, $0^\circ < \theta < 90^\circ$ है, तो $(\tan 2\theta + \operatorname{cosec} 3\theta - \sec 2\theta)$ का मान ज्ञात करें।

(a) $\sqrt{3} + 1$ (b) $\frac{1+\sqrt{3}}{\sqrt{3}}$
(c) $\sqrt{3} - 1$ (d) $\frac{1-\sqrt{3}}{\sqrt{3}}$

90. The following histogram represents the daily earnings of 50 medical stores in a locality.
निम्न आयत चित्र किसी इलाके में 50 मेडिकल स्टोर की दैनिक आय को निरूपित करता है।

The difference between the percentage of medical stores whose daily earnings are less than ₹1,000 and the percentage of medical stores whose daily earnings are ₹1,200 and above is:
₹1,000 से कम दैनिक आय वाले मेडिकल स्टोरों के प्रतिशत और ₹1,200 या उससे अधिक दैनिक आय वाले मेडिकल स्टोरों के प्रतिशत के बीच अंतर ज्ञात करें।

(a) 15% (b) 24%
(c) 12% (d) 16%

91. In the given sentence, identify the segment which contains a grammatical error.
As soon as the bus driver was seeing the child crossing the road, he applied the brakes.

(a) As soon as the bus driver
(b) was seeing the child
(c) crossing the road
(d) he applied the brakes

92. Fill in the blank with most appropriate word.
This train is for Bihar.

(a) bound (b) going
(c) running (d) intending

93. Select the most appropriate synonym of the given word.
COMPLY

(a) obey (b) adore
(c) decline (d) deny

94. Select the most appropriate antonym of the given word.
Weird

(a) Apparent (b) Normal
(c) Abnormal (d) Wide

95. Select the incorrectly spelt word.

(a) Feature (b) Torches
(c) Sacrifice (d) Highlite

96. Select the most appropriate meaning of the given idiom.
To go red in the face

(a) To shout at someone for doing something wrong
(b) To feel embarrassed
(c) To feel very happy and proud
(d) To feel extremely irritated

97. Select the most appropriate one-word substitution for the given words.
a person who formally requests something, especially a job

(a) applicant (b) trainee
(c) contestant (d) nominee

98. Select the option that expresses the given sentence in the active or passive voice.
Designer clothes were sold to the masses by Pierre Cardin.

(a) The masses were sold by Pierre Cardin to the designer clothes
(b) Designer clothes have been sold by Pierre Cardin to the masses
(c) Pierre Cardin sold designer clothes to the masses
(d) Pierre Cardin had sold designer clothes to the masses

99. Select the correct indirect form of the given sentence.
She said to her friend, "Will you take my dog for a walk?"

(a) She asked her friend that If she will take her dog for a walk
(b) She asked her friend will she will take her dog for a walk
(c) She asked her friend If she would take her dog for a walk
(d) She asked to her friend If she would take my dog for a walk

100. Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the right order to form a meaningful and coherent paragraph.

A. On the other, there is the principle of leadership.
B. Democracy rests on a tension between two different principles.
C. While the first gives priority to rules, the second gives importance to persons.
D. On the one hand, there is the principle of equality before the law, or more generally equality.

(a) BDAC (b) CDAB
(c) DACB (d) ADBC