

**STATE BOARD OF TECHNICAL EDUCATION AND TRAINING
TELANGANA :: HYDERABAD**

CIRCULAR

POLYCET-2021 Entrance Examination for admission into Diploma Courses in Engineering (Polytechnic), Agriculture and Animal Husbandry & Fisheries will be conducted on 12-06-2021(Saturday) throughout the Telangana state. The exam will be conducted as per SSC Topics in syllabus for Academic Year 2020-2021 in Mathematics & Physical sciences subjects for engineering Diploma courses offered by SBTET, Hyderabad whereas exam will be conducted for Agriculture Diploma courses offered by PJSTSAU and Animal Husbandry & Fisheries Diploma courses offered by P.V.Narsimha Rao Telangana Veterinary University, Hyderabad in Mathematics, Physical sciences & Biology subjects as per the below tentative schedule:

S.No.	Event	Date
1	Commencement of online registration for POLYCET-2021.	01-05-2021
2	Last date for online registration without late fee.	22-05-2021
3	Last date for online registration with late fee of Rs. 100/-	24-05-2021
4	Last date for Tatkal online registration with late fee of Rs.300/-	25-05-2021
5	Date of conduct of POLYCET-2021.	12-06-2021
6	Declaration of results.	24-06-2021

The candidates can apply through online www.polycetts.nic.in or visit sbtet.telangana.gov.in

(This has the approval of the Chairman, SBTET)

Signature valid

Digitally signed by DR C SRINATH
Date: 2021.02.20 18:08:05 IST
Reason: Approved

(**DR C SRINATH**)

Secretary

SYLLABUS FOR POLYCET- 2021

(AS PER SSC-2021 SYLLABUS)

SUBJECT	SL.NO	TOPIC
MATHEMATICS	1	Real Numbers 1) Division Algorithm 2) Euclid's Algorithm 3) Fundamental Theorem of Arithmetic 4) Rational Numbers And Their Decimal Expansions 5) Irrational Numbers 6) Logarithms
MATHEMATICS	2	Sets 1) Roster Form and Set Builder Form 2) Empty set, Universal set and subset 3) Basic operations on sets 4) Venn diagrams 5) Equal sets 6) Finite & infinite sets, cardinality of a finite set
MATHEMATICS	3	Polynomials 1) Degree, zero, value of a polynomial 2) Graphical representation of a quadratic polynomial 3) Relationship between zeroes and coefficients of a polynomial
MATHEMATICS	4	Pair of Linear Equations in Two Variables 1) Graphical Method 2) Relationship between coefficients and nature of equations 3) Substitution method 4) Elimination method
MATHEMATICS	5	Quadratic Equations 1. Quadratic equation 2. Solution by Factorization 3. Nature of roots

MATHEMATICS	6	Progressions 1) What is an arithmetic progression? 2) n^{th} term of AP 3) Sum of 'n' terms of AP
MATHEMATICS	7	Coordinate Geometry 1) Distance between two points 2) Section Formula- Points of trisection, centroid 3) Area of triangle 4) Slope of a line
MATHEMATICS	8	Similar Triangles 1) Similar Triangles 2) Basic Proportionality theorem and converse 3) Criteria for Similarity of triangles 4) Pythagoras Theorem
MATHEMATICS	9	Tangents and Secants to a Circle 1) Tangents of a circle 2) Finding Length of a Tangent 3) Number of Tangents to a circle
MATHEMATICS	10	Mensuration 1) Surface Area and Volume of Solid Figures 2) Surface Area of Combination of Solids 3) Volume of Combination of Solids
MATHEMATICS	11	Trigonometry 1) Trigonometric Ratios 2) Values of Trigonometric Ratios for specific Angles 3) Trigonometric Identities
MATHEMATICS	12	Applications of Trigonometry 1) Problems with one triangle 2) Problems with two triangles
MATHEMATICS	13	Probability 1) Probability-Mutually Exclusive Events 2) Complementary Events and probability 3) Deck of Cards and probability 4) Applications of probability

MATHEMATICS	14	Statistics 1) Mean – Direct Method - Assumed mean method 2) Median 3) Mode 4) Graph of Ogive Curves(less than type)
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SUBJECT	SL.NO	TOPIC
CHEMISTRY	1	Chemical Equations • Introduction • Some daily life examples of chemical reactions • Chemical equations – writing chemical equations • skeletal chemical equations • balancing chemical equations • Writing symbols of physical states • Heat changes • gas evolved and precipitate formed • Interpreting a balanced chemical equation.
CHEMISTRY	2	Acids, Bases and Salts • Introduction • Chemical properties of acids& bases • what do acids have in common? • What do bases have in common? • Do Acids produce Ions only in Aqueous Solution? • Reaction of Acid, Base with water • Strength of Acid or Base - p^H scale • Importance of p^H in everyday life, Salts • Chemicals from common salt.
CHEMISTRY	3	Structure of Atom • Introduction • Spectrum, Electromagnetic Spectrum • Bohr's model of Hydrogen atom and its limitations, Quantum Numbers • Quantum mechanical model of an Atom • Electronic Configuration of elements in their atoms • Aufbau Principle • Paulis Exclusion principle • Hund's Rule of maximum multiplicity

CHEMISTRY	4	Classification of Elements- The Periodic Table • Introduction • Need for arrangement of elements in an organized manner • Doberieners Triads –Limitations, Newland’s law of Octaves • Mendeleev’s Periodic Table (Periodic law, Achievements & Limitations) • Modern Periodic Table • Properties of element and their trends in groups and periods.
CHEMISTRY	5	Principles of Metallurgy • Occurrence of Metals in nature • Extractions of metals from the Ores – activity series and related metallurgy • Flow chart of steps involved in the extraction of metals from ore, extraction of crude metals from the ore • Corrosion – Prevention of Corrosion • Important Processes used in metallurgy, Flux, Furnace.

SUBJECT	SL.NO	TOPIC
PHYSICS	1	Reflection of light at Curved Surfaces • Introduction • Normal to the curved surface • Spherical mirrors • Convex • Concave mirrors • Pole • Focus • Centre of curvature • Principal axis • Radius of curvature • Focal length • Images formed by spherical mirrors • Ray diagrams for spherical mirrors • Formula for spherical mirrors – sign convention • Application of reflection – Solar Cooker
PHYSICS	2	Refraction of Light at Curved Surfaces • Introduction • Refraction of light at curved surface • Lenses, Image formation • Rules for Ray diagram • Images formed by the lenses • Formula derived for thin lenses • Focal length of lens depends on surrounding medium • Behaviour of certain light ray when they are incident on a lens • Rules to draw the ray diagram for image formation by lens • Magnification • Lens maker formula.
PHYSICS	3	Human Eye and Colourful world

		• Introduction • Least distance of distinct vision • Structure of human Eye • Myopia • Hypermetropia • Presbyopia
PHYSICS	4	Electric Current • Introduction • Electric current, Potential difference • How a battery or a cell works • Ohms law and its limitations • resistance, specific resistance • factors influencing resistance • electric shock • Electric Circuits, Kirchhoff's laws • Electric power • Safety fuses

BIOLOGY	
SL.NO	TOPIC
1	NUTRITION • Autotrophic Nutrition • Water and Photosynthesis • Air and Photosynthesis • Light and Photosynthesis • Chlorophyll and Photosynthesis • Where does Photosynthesis take place? • Mechanism of Photosynthesis • Nutrition in Human Beings • Flow chart of human digestive system • Health aspects of the alimentary canal • Diseases due to malnutrition • Vitamin deficiency diseases
2	RESPIRATION • Discovery of gases and respiration • Steps in Respiration • Breathing • Pathway of air • Epiglottis and passage of air • Mechanism of respiration in human beings • Gaseous Exchange (alveoli to capillaries) • Transportation of gases • Gaseous exchange (capillaries to cells and back) • Cellular respiration • Anaerobic respiration • Fermentation • Respiration versus combustion • Evolution in gases exchanging system • Respiration in plants • Photosynthesis versus Respiration

3	TRANSPORTATION • Introduction – Need of the transport system in all living beings • Internal structure of the heart • Blood vessels and circulation • The cardiac cycle • Single and double circulation • Lymphatic system • Blood Pressure(B.P.) • Coagulation of blood • How is water absorbed? • The mechanism of water movement in plants • Transport of mineral salts • Transport of materials in plants
4	EXCRETION • Introduction – Need of excretion • Excretion in Human Beings • Excretory System in Human being 1. Kidneys Mechanism of urine formation 2. Ureters 3. Urinary bladder • Micturition • Composition of urine • Dialysis Machine (Artificial kidney) • Kidney transplantation • Other pathways of excretion (accessory excretory organs) • Excretion in other organisms • Excretion and release of substances in plants • Excretion Vs Secretion
5	COORDINATION • Introduction – Need for control and coordination • Responding to stimuli • Integrating pathways - nervous coordination • Structure of nerve cell • Central Nervous System(CNS)

	• Peripheral Nervous System • Autonomous Nervous System • Coordination without nerves • Other chemical coordinators • Control mechanisms in plants • Tropic and nastic movements in plants
6	REPRODUCTION • Introduction • Asexual mode of reproduction • Parthenogenesis • Parthenocarp • Vegetative propagation • Sexual reproduction • Reproduction in placental mammals – Human beings • Male reproductive system • Female reproductive system • Childbirth • Sexual reproduction in flowering plants • Cell division and continuation of life • Cell division in Human beings • Cell cycle • Reproductive health • Birth control methods • Fighting against social ills
7	HEREDITY & EVOLUTION • Introduction • New characters and variations • Mendel and his experiments • Reasons for selecting pea plant • Procedure followed by Mendel • Mono hybrid cross • Self pollination in F1- Generation • F2-Generation • Phenotype • Genotype

	• Di hybrid Cross • Mendel's Laws • Parent to progeny • How do traits get expressed? • Sex determination in human beings • Lamarckism • Darwinism • Speciation • Evidences of evolution • Evidences from embryology • Evidences from fossils • Human being –a moving museum
	TOTAL