THE AIR FORCE SCHOOL
MOCK PRE-BOARD SYLLABUS – 2020-21
<mark>REVISED</mark>

SECTION – B
SUBJECT – ENGLISH

S. No.	Name of the Topic	Weightage	Topic which will not be assessed
1.	**OBJECTIVE SECTION** a) Reading Comprehension b) Literature (All chapters listed under Subjective section)	25 Marks	Note Making and Summary Writing Deletions (All literature topics mentioned under deletions in Subjective Section)
2.	**SUBJECTIVE SECTION** **a) Writing Skills** - Notice - Advertisements (Classified and Display) - Invitations & Replies - Letter to Editor - Application for Job with C.V - Article - Report **b)Literature:** Flamingo: - The Last Lesson - Lost Spring - Deep Water - The Rattrap - Indigo - My Mother at Sixty-Six - An Elementary School Classroom in a Slum - Keeping Quiet - A Thing of Beauty - Aunt Jennifer's Tigers Vistas: - The Third Level - The Enemy - Should Wizard Hit Mommy - On the Face of It - Evans Tries an O-Level	55 Marks	**Writing Tasks** - Poster - Letter Placing an Order, cancelling an Order - Letter of Complaint - Letter of Enquiry-asking and giving information. - Debate - Speech **Literature** **Flamingo** - Poet and Pancakes - The Interview - Going Places - A Roadside Stand **Vistas** - The Tiger King - Journey to the End of the Earth - Memories of Childhood

SUBJECT – MATHEMATICS

S. No.	Name of the Topic	Weightage	Topic which will not be assessed
01	**UNIT I** **Chapter – 1** Relations and Functions **Chapter – 2** Inverse Trigonometric functions	08 Marks	1. Composite function 2. Inverse of a function 3. Binary operations 1.Graphs 2.Elementary properties
02	**UNIT II** **Chapter – 3** Matrices **Chapter – 4** Determinants	10 Marks	Concept of elementary row and column operations 1.Properties of Determinants 2. Consistency, inconsistency and number of solutions of system of linear equations
03	**UNIT III** **Chapter – 5** Continuity and Differentiability **Chapter – 6** Applications of Derivatives **Chapter – 7:** Integrals **Chapter – 8**: Application of Integrals **Chapter – 9**: Differential Equation	35 Marks	Rolle's and Mean value Theorems 1. Rate of change 2. Use of derivatives in approximation 1.Integrals of the types $\int \sqrt{ax^2 + bx + c}\, dx$, $\int (ax + b)\sqrt{ax^2 + bx + c}\, dx$ 2.Definite integrals as a limit of a sum Area between any of the two curves 1. Formation of differential equation whose general solution is given 2. Solution of homogeneous differential equation of the type $\frac{dy}{dx} = f\left(\frac{x}{y}\right)$ 3. Solution of linear differential equation of the type $\frac{dx}{dy} + px = q$

04	**UNIT IV** **Chapter – 10**: Vectors **Chapter – 11** Three dimensional geometry	14 Marks	Scalar triple product of vectors Angle between 1. Two lines 2. Two planes 3. A line and a plane
05	**UNIT V** **Chapter – 12:** Linear Programming	05 Marks	1. Mathematical Formulation of Linear Programming Problems 2. Unbounded feasible regions
06	**UNIT VI** **Chapter -13**: Probability	08 Marks	1. mean and variance of random variable. 2. Binomial distribution

SUBJECT – PHYSICS

S. No.	Name of the Chapter	Weightage	Topic which will not be assessed
1.	**Unit I** **Chapter 1.** Electric Charges and Fields **Chapter 2.** Electrostatic potential and Capacitance	09 Marks	uniformly charged thin spherical shell (field inside and outside).
2.	**Unit II** **Chapter 3.** Current Electricity	07 Marks	Carbon resistors, colour code for carbon resistors; series and parallel combinations of resistors
3.	**Unit III** **Chapter 4.** Moving Charges and Magnetism **Chapter 5.** Magnetism and Matter	09 Marks	Cyclotron Magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis, torque on a magnetic dipole (bar magnet) in a uniform magnetic field; Para-, dia- and ferro - magnetic substances, with examples. Electromagnets and factors affecting their strengths, permanent magnets.
4.	**Unit IV** **Chapter 6.** Electromagnetic Induction **Chapter 7.** Alternating Current	08 Marks	power factor, wattless current.

5.	**Unit V** **Chapter 8.** Electromagnetic Waves	03 Marks	Basic idea of displacement current
6.	**Unit VI** **Chapter 9.** Ray Optics and Optical Instruments **Chapter 10.** Wave Optics	15 Marks	Reflection of light, spherical mirrors,(recapitulation) mirror formula , Scattering of light - blue colour of sky and reddish appearance of the sun at sunrise and sunset. Resolving power of microscope and astronomical telescope, polarisation, plane polarised light, Brewster's law, uses of plane polarised light and Polaroids.
7.	**Unit VII** **Chapter 11.** Dual Nature of Matter and Radiation	05 Marks	Davisson-Germer experiment
8.	**Unit VIII** **Chapter 12.** Atoms **Chapter 13.** Nuclei	07 Marks	Radioactivity, alpha, beta and gamma particles/rays and their properties; radioactive decay law, half life and mean life binding energy per nucleon and its variation with mass number
9.	**Unit IX** **Chapter 14.** Semiconductor Electronics	07 Marks	Zener diode and their characteristics, zener diode as a voltage regulator.

SUBJECT – CHEMISTRY

S. No.	Name of the Chapter	Weightage	Topic which will not be assessed
1.	Solid State	04 Marks	Electrical and magnetic properties. Band theory of metals, conductors, semiconductors and insulators and n and p type semi conductors.
2.	Solutions	05 Marks	Abnormal molecular mass, Van't Hoff factor
3.	Electrochemistry	05 Marks	Lead accumulator, fuel cells, corrosion, law of electrolysis (elementary idea), dry cell- electrolytic cells and Galvanic cells.
4.	Chemical Kinetics	05 Marks	Concept of collision theory (elementary idea, no mathematical treatment), activation energy, Arrhenius equation
5.	Surface Chemistry	04 Marks	Emulsion - types of emulsions, catalysis: homogeneous and heterogeneous, activity and selectivity of solid catalysts; enzyme catalysis

6.	General Principles and Processes of Isolation of Elements	-	Entire unit
7.	p- Block Elements	08 Marks	Preparation and properties of Phosphine, Sulphuric Acid: industrial process of manufacture, Oxides of Nitrogen (Structure only); Phosphorus - allotropic forms, compounds of Phosphorus: Preparation and properties of Halides and Oxo acids (elementary idea only).
8.	d and f- Block Elements	06 Marks	Chemical reactivity of lanthanides, Actinides - Electronic configuration, oxidation states and comparison with lanthanide. Preparation and properties of $KMnO_4$ and $K_2Cr_2O_7$
9	Co-ordination compounds	05 Marks	Coordination Compounds Structure and stereoisomerism, importance of coordination compounds (in qualitative analysis, extraction of metals and biological system).
10.	Haloalkanes and Haloarenes	06 Marks	Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.
11.	Alcohols, Phenols and Ethers	05 Marks	uses with special reference to methanol and ethanol.
12.	Aldehydes, ketones and Carboxylic acids	08 Marks	_____
13.	Amines	05 Marks	Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry
14.	Biomolecules	04 Marks	Oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen), importance of carbohydrates. Vitamins– classification and functions. Enzymes. Hormones - Elementary idea excluding structure.
15.	Polymers	-	Entire chapter
16.	Chemistry in Everydaylife	-	Entire chapter

SUBJECT – BIOLOGY

S. No.	Name of the Topic	Weightage	Topic which will not be assessed
1.	Chapter – 1: Reproduction in Organisms	-	Entire chapter
2	Chapter – 2: Sexual Reproduction in Flowering Plants	05 Marks	-
3.	Chapter – 3: Human Reproduction	05 Marks	-
4.	Chapter – 4: Reproductive Health	04 Marks	-
5.	Chapter – 5: Principles of Inheritance and Variation	06 Marks	-
6.	Chapter – 6: Molecular Basis of Inheritance	06 Marks	-
7	Chapter – 7: Evolution	--	Entire chapter
8	Chapter – 8: Human Health and Diseases	08 Marks	
9	Chapter – 9: Strategies for Enhancement in Food Production	--	Entire chapter
10	Chapter – 10: Microbes in Human Welfare	08 Marks	
11	Chapter – 11: Biotechnology – Principles and processes	08 Marks	
12	Chapter – 12: Biotechnology and its Application	08 Marks	
13	Chapter – 13: Organisms and Populations	07 Marks	
14	Chapter – 14: Ecosystem	-	Entire chapter
15	chapter – 15: Biodiversity and its Conservation	05 Marks	
16	chapter – 16: Environmental Issues	-	Entire chapter

SUBJECT – IP

S. No.	Name of the Topic	Weightage	Topic which will not be assessed
1.	Unit-1 Data Handling using	25 Marks	Unit-1 Data handling using Pandas – II Descriptive Statistics: quartile, Standard

			deviation, variance.
	Pandas and Data Visualization		Data Frame operations: Aggregation, group by, Sorting, Deleting and Renaming Index, Pivoting. Handling missing values – dropping and filling. Importing/Exporting Data between MySQL database and Pandas. Data Visualization,pie chart, frequency polygon, box plot and scatter plot. : color, style (dashed, dotted), width;
2	Unit 2: Database Query using SQL	25 Marks	Joining, Merging and Concatenation.
3.	Unit 3 Introduction to Computer Networks	10 Marks	-
4.	Unit 4 Societal Impacts	10 Marks	-

SUBJECT – HOME SCIENCE

S. No.	Name of the Unit	Weightage	Non Assessed topic/chapter
1.	Work, Livelihood and Career	05 Marks	Nil
2.	Nutrition, Food Science and Technology	23 Marks	Catering and Food Service Man agement
3.	Human Development and Family Studies	10 Marks	Special Education and Support Services
4.	Fabric and Apparel	17 Marks	Production and Quality control in the Garment Industry
5.	Resource Management	10 Marks	Human Resource Management
6.	Communication and Extension	05 Marks	Media Management, Design and Production

SUBJECT – PSYCHOLOGY

S. No.	Name of the Topic	Weightage	Topic which will not be assessed
1	Variations in Psychological Attributes	12 Marks	-

2	Self and Personality	13 Marks	-
3	Meeting Life Challenges	10 Marks	-
4	Psychological Disorders	13 Marks	-
5	Therapeutic Approaches	07 Marks	PSYCHODYNAMIC THERAPY PG 94 TO 96 BIOMEDICAL THERAPY PG 101 TO 102
6.	Atitude And Social Cognition	08 Marks	SOCIAL COGNITION PG 119 TO 125
7.	Social Influence And Group Processes	07 Marks	CONFORMITY , COMPLIANCE AND OBEDIENCE PG 138 COOPERATION AND COMPETITION PG 144 TO 146 SOCIAL IDENTITY PG 146-147 INTERGROUP CONFLICT PG 147, 148 CONFLICT RESOLUTION STRATEGY – 148 ,149