

Class -XII
Subject: Biology

SL no	CHAPTER	LINKS
	Unit VI: Reproduction	MARK 14
1	Reproduction in Organisms	https://www.youtube.com/watch?v=uLXz1PLgCGg
2	Sexual Reproduction in Flowering Plants	https://www.youtube.com/watch?v=6UXGobXdZGA
3	Human Reproduction	https://www.youtube.com/watch?v=Lbv6WbjlQW0
4	Reproductive Health	https://www.youtube.com/watch?v=NShd2e6m568
	Unit VII: Genetics and Evolution	MARK 18
5	Principles of Inheritance and Variation	https://www.youtube.com/watch?v=agUgUIJQ1pk
6	Molecular Basis of Inheritance	https://www.youtube.com/watch?v=1xXeTccA- w https://www.youtube.com/watch?v=XNdvpefKaYk
7	Evolution	https://www.youtube.com/watch?v=RTX9si5RBb0
	Unit VIII: Biology and Human Welfare	MARK 14
8	Human Health and Diseases	https://www.youtube.com/watch?v=YA9Kil7gW5Q https://youtu.be/AwISyM1L8N4
9	Strategies for Enhancement in Food Production	https://www.youtube.com/watch?v=Ha_plbPM_VE
10	Microbes in Human Welfare	https://www.youtube.com/watch?v=65sh_0kBuM8
	Unit IX: Biotechnology and its Application	MARK 10
11	Biotechnology – Principles and Processes	https://www.youtube.com/watch?v=TQRL9JnYkA4
12	Biotechnology and its Application	https://www.youtube.com/watch?v=xF7F3kAJmuQ
	Unit X: Ecology and Environment	MARK 14
13	Organisms and Populations	https://www.youtube.com/watch?v=L68S1t9XVgE
14	Ecosystem	https://www.youtube.com/watch?v=ZbVkJGrlaJ4
15	Biodiversity and its Conservation	https://www.youtube.com/watch?v=pfPR0siCG0k
16	Environmental Issues	https://www.youtube.com/watch?v=4GiZJiowSRw

Class -XII
Subject: Chemistry

Unit-1: Solid State	Part-I	https://www.youtube.com/watch?v=RcG9e2Bg3eE&list=PLNz32RYOjBerucfu000AYIqZdRU1duNXQ&index=21&t=14s
	Part-II	https://www.youtube.com/watch?v=KZDUJulaAWw&list=PLNz32RYOjBerucfu000AYIqZdRU1duNXQ&index=20&t=714s
Unit -2: Solution		https://www.youtube.com/watch?v=1VEICP7_GFI&list=PLNz32RYOjBerucfu000AYIqZdRU1duNXQ&index=19&t=3609s
Unit-3: Electrochemistry		https://www.youtube.com/watch?v=paRg8Q9Y1t8&list=PLNz32RYOjBerucfu000AYIqZdRU1duNXQ&index=18&t=13s
Unit-4: Chemical Kinetics		https://www.youtube.com/watch?v=602063c-qzU&list=PLNz32RYOjBerucfu000AYIqZdRU1duNXQ&index=17&t=175s
Unit -5: Surface Chemistry	Part-I	https://www.youtube.com/watch?v=2cCiOvm44q4&list=PLNz32RYOjBerucfu000AYIqZdRU1duNXQ&index=16&t=0s
	Part-II	https://www.youtube.com/watch?v=-YtNNph4qIM&list=PLNz32RYOjBerucfu000AYIqZdRU1duNXQ&index=15&t=0s
Unit -6: General Principals and Process of Isolation of Elements		https://www.youtube.com/watch?v=QalAQq_-Z14&list=PLNz32RYOjBerucfu000AYIqZdRU1duNXQ&index=14&t=0s
Unit -7: P-Block Elements	Part-I	https://www.youtube.com/watch?v=kNFXJxX72uY&list=PLNz32RYOjBerucfu000AYIqZdRU1duNXQ&index=13&t=0s
	Part-II	https://www.youtube.com/watch?v=Xvt11injjiA&list=PLNz32RYOjBerucfu000AYIqZdRU1duNXQ&index=12&t=0s
Unit-8: d & f Block Elements	Part-I	https://www.youtube.com/watch?v=LzZWHSdYaxw&list=PLNz32RYOjBerucfu000AYIqZdRU1duNXQ&index=11&t=287s
	Part-II	https://www.youtube.com/watch?v=w3e0Zpz1iZw&list=PLNz32RYOjBerucfu000AYIqZdRU1duNXQ&index=10&t=41s
Unit-9: Coordination Compounds		https://www.youtube.com/watch?v=53z1EiflKNI&list=PLNz32RYOjBerucfu000AYIqZdRU1duNXQ&index=9&t=1025s

Class -XII
Subject: Physics

UNITS		WEBLINKS
Unit 1. Electrostatics	Part 1	https://www.youtube.com/watch?v=5JZjEmJqtus&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=19
	Part 2	https://www.youtube.com/watch?v=jeLUsBz0XIM&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=18
	Part 3	https://www.youtube.com/watch?v=5id9XWSaS4g&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=17
	Part 4	https://www.youtube.com/watch?v=bAb4Yt0NR7w&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=16
Unit 2. Current Electricity		https://www.youtube.com/watch?v=7V9rjkE5YQ&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=15
Unit 3. Magnetic Effect of Current and Magnetism	Part 1	https://www.youtube.com/watch?v=8zKTFwlzXhM&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=14
	Part 2	https://www.youtube.com/watch?v=96mflZXJcA&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=13
Unit 4. Electromagnetic Induction and Alternating Currents	Part 1	https://www.youtube.com/watch?v=GtjtpSAD-w0&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=12
	Part 2	https://www.youtube.com/watch?v=DZv-F_XtJ68&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=11
Unit 5. Electromagnetic Waves		https://www.youtube.com/watch?v=p0AwOTqgTTk&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=10
Unit 6. Optics	Part 1	https://www.youtube.com/watch?v=ZJcLscYRG4M&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=9
	Part 2	https://www.youtube.com/watch?v=hcNrcXxijvo&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=8
	Part 3	https://www.youtube.com/watch?v=hgyWISROhSA&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=7
Unit 7. Dual nature of radiation and Matter		https://www.youtube.com/watch?v=6snnsNjhD24&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=6
Unit 8. Atoms and Nuclei	Part 1	https://www.youtube.com/watch?v=mBCqywZ-eXg&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=5
	Part 2	https://www.youtube.com/watch?v=uVeczxtTxz0&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=4
Unit 9. Electronic Devices	Part 1	https://www.youtube.com/watch?v=EaP2qHdfJUs&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=3
	Part 2	https://www.youtube.com/watch?v=aFdpYFJlqdc&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=2
Unit 10. Communication Systems		https://www.youtube.com/watch?v=hMdkfZmu5YY&list=PLNz32RYOjBepdhGCSA5OoVPha83vKJePI&index=1

Class -XII
Subject: Mathematics

CHAPTER/MARK	TOPIC COVERED	WEBLINK FOR CONCEPTUAL STUDY
1: RELATION AND FUNCTIONS (5 marks)	1.1 Relation	https://youtu.be/bzJs4H1ufaw
	1.2 Types of relations	
	1.3 TYPES OF FUNCTIONS	
	1.4 COMPOSITION OF FUNCTIONS AND INVERTIBLE FUNCTIONS	
	1.4 BINARY OPERATIONS	
2: INVERSE TRIGONOMETRIC FUNCTIONS (5 marks)	2.1 INTRODUCTION AND BASIC CONCEPTS	https://youtu.be/tQDCgaAZ-EU
	2.2 PROPERTIES OF INVERSE TRIGONOMETRIC FUNCTIONS	
3: MATRICES (7 marks)	3.1 MATRIX AND TYPES OF MATRICES	https://youtu.be/ISJbrBrHZn0
	3.2 OPERATIONS ON MATRICES	
	3.3 TRANSPOSE OF A MATRIX	
	3.4 SYMMETRIC AND SKEW SYMMETRIC MATRICES	
	3.5 ELEMENTARY TRANSFORMATION OF A MATRIX	
	3.6 INVERTIBLE MATRICES	
4: DETERMINANTS (6 marks)	4.1 DETERMINANT (INTRODUCTION)	https://youtu.be/BZ1tT7Lod5M
	4.2 PROPERTIES OF DETERMINANTS	
	4.3 AREA OF A TRIANGLE	
	4.4 MINORS AND COFACTORS	
	4.5 ADJOINT AND INVERSE OF A MATRIX	
	4.6 APPLICATION OF DETERMINANTS AND MATRICES	
5: CONTINUITY AND DIFFERENTIABILITY (10 marks)	5.1 CONTINUITY	https://youtu.be/uahqLcCaiNs
	5.2 DIFFERENTIABILITY	
	5.3 EXPONENTIAL AND LOGARITHMIC FUNCTIONS	
	5.4 LOGARITHMIC DIFFERENTIATION	
	5.5 DERIVATIVES OF PARAMETRIC FUNCTIONS	
	5.6 SECOND ORDER DERIVATIVE	
	5.7 MEAN VALUE THEOREM	
6: APPLICATION OF DERIVATIVES (8 marks)	6.1 RATE OF CHANGE OF QUANTITIES	https://youtu.be/gf8WO4qem0Y
	6.2 INCREASING AND DECREASING FUNCTIONS	
	6.3 TANGENTS AND NORMAL	
	6.4 APPROXIMATIONS	
	6.5 MAXIMA AND MINIMA	
7: INTEGRALS (14 MARKS)	7.1 INTRODUCTION	https://youtu.be/IROu1XoGoYQ
	7.2 INTEGRATION AS AN INVERSE PROCESS OF DIFFERENTIATION	
	7.3 METHODS OF INTEGRATION	
	7.4 INTEGRALS OF SOME PARTICULAR FUNCTIONS	
	7.5 INTEGRATION BY PARTIAL FRACTION	
	7.6 INTEGRATION BY PARTS	
	7.7 DEFINITE INTEGRALS	
	7.8 FUNDAMENTAL THEOREM OF CALCULUS	

	7.9 EVALUATION OF DEFINITE INTEGRALS BY SUBSTITUTION	
	7.10 SOME PROPERTIES OF DEFINITE INTEGRALS	
8: APPLICATION OF INTEGRALS (4 MARKS)	8.1 INTRODUCTION	https://youtu.be/TBD_adLmqeg
	8.2 AREA UNDER SIMPLE CURVES	
	8.3 AREA BETWEEN TWO CURVES	
9: DIFFERENTIAL EQUATIONS (8 MARKS)	9.1 INTRODUCTION	https://youtu.be/qZ9ssqQ9nwA
	9.2 GENERAL AND PARTICULAR SOLUTIONS OF A DIFFERENTIAL EQUATION	
	9.3 FORMATION OF A DIFFERENTIAL EQUATION	
	9.4 METHODS OF SOLVING FIRST ORDER, FIRST DEGREE DIFFERENTIAL EQUATION	
10: VECTOR ALGEBRA (8 MARKS)	10.1 INTRODUCTION	https://youtu.be/xuK4YNtP4oQ
	10.2 TYPES OF VECTORS	
	10.3 ADDITION OF VECTORS	
	10.4 MULTIPLICATION OF A VECTOR BY A SCALAR	
	10.5 PRODUCT OF TWO VECTORS	
11: THREE DIMENSIONAL GEOMETRY (9 MARKS)	11.1 INTRODUCTION	https://youtu.be/q5BR40ZJ4xM
	11.2 DIRECTION COSINES AND DIRECTION RATIOS OF A LINE	
	11.3 EQUATION OF A LINE IN SPACE	
	11.4 ANGLE BETWEEN TWO LINES	
	11.5 SHORTEST DISTANCE BETWEEN TWO LINES	
	11.6 PLANE	
	11.7 COPLANARITY OF TWO LINES	
	11.8 ANGLE BETWEEN TWO PLANES	
	11.9 DISTANCE OF A POINT FROM A PLANE	
	11.10 ANGLE BETWEEN A LINE AND A PLANE	
12: LINEAR PROGRAMMING (6 MARKS)	12.1 INTRODUCTION	https://youtu.be/4PBUH9WFELo
	12.2 LINEAR PROGRAMMING PROBLEM AND ITS MATHEMATICAL FORMULATION	
	12.3 DIFFERENT TYPES OF LINEAR PROGRAMMING PROBLEMS	
13: PROBABILITY (10 MARKS)	13.1 INTRODUCTION	https://youtu.be/9qQ9wD29z4c
	13.2 CONDITIONAL PROBABILITY	
	13.3 MULTIPLICATION THEOREM ON PROBABILITY	
	13.4 INDEPENDENT EVENTS	
	13.5 BAYES' THEOREM	
	13.6 RANDOM VARIABLE AND ITS PROBABILITY DISTRIBUTION	
	13.7 BERNOULLI TRIALS AND BINOMIAL DISTRIBUTION	

Note: For complete textual solutions please download the App from the Link:
https://play.google.com/store/apps/details?id=com.studentzoneapps.mathsncertclass_12

Class -XII
Subject: Engineering Drawing

Topic/Chapter	Link
Unit 1: Isometric Projection of solids	
Construction of Isometric scale	https://www.youtube.com/watch?v=0yRfY6vouk4
Isometric View - of a Triangle (with Helping View)	https://www.youtube.com/watch?v=hUw89MgsjcE
Constructing a Regular Pentagon within given Circle By Using Ruler and Compass	https://www.youtube.com/watch?v=9vuJ3W0uD_8
Construction of Pentagon using protector	https://www.youtube.com/watch?v=0l-Ly8g3IIE
How to draw a regular pentagon knowing the length of one side	https://www.youtube.com/watch?v=NJ4ADblcf6I
How to draw the isometric view of pentagon (with Helping view)	https://www.youtube.com/watch?v=OrU5y8IMxOM
How to draw a regular hexagon knowing the length of one side.	https://www.youtube.com/watch?v=ZfZzIN_5cgQ
Isometric projection of hexagon in hindi	https://www.youtube.com/watch?v=jrcJPgr2fHO
	https://www.youtube.com/watch?v=Hy9p-fRlRkE
Isometric projection of cube	https://www.youtube.com/watch?v=MHARXHaMMs4
Projection of pentagonal prism (in orthographic and isometric)	https://www.youtube.com/watch?v=3LFDORNpNaU
Isometric projection of rectangular (prism and pyramid)	https://www.youtube.com/watch?v=-tS9ILOsVho
Isometric projection of triangular pyramid	https://www.youtube.com/watch?v=I00NVSWHCQM
Isometric projection of square pyramid resting on apex and base.	https://www.youtube.com/watch?v=AgOo8umI654
Isometric projection of pentagonal Pyramid (orthographic and Isometric views)	https://www.youtube.com/watch?v=QDS6y_U7wdw
Isometric projection of hexagonal Pyramid.	https://www.youtube.com/watch?v=XVA0hoqsP_I
Example: Draw the isometric view of the hexagonal pyramid of 80mm and base side 40mm placed on H.P. with one of the side parallel to V.P.	https://www.youtube.com/watch?v=BiELsxac3e4
Isometric Projection of circle	https://www.youtube.com/watch?v=AilUpRpEeGc
Isometric projection of cone and cylinder	https://www.youtube.com/watch?v=wAH7N6OsRhW

Isometric projection of cylinder	https://www.youtube.com/watch?v=HKKta2sBOKE
Isometric projection of sphere	https://www.youtube.com/watch?v=VclEDrscIW4
Isometric projection of hemisphere	https://www.youtube.com/watch?v=LbKoQXEaMgs
Isometric projection of frustum of right triangular Pyramid	https://www.youtube.com/watch?v=ydzwdJiwD9k
Isometric projection of frustum of right square pyramid	https://www.youtube.com/watch?v=tEAJLcvmKQI
Isometric projection of frustum of right pentagonal pyramid	https://www.youtube.com/watch?v=fZxkAJa54ew
Isometric projection of frustum of right hexagonal pyramid	https://www.youtube.com/watch?v=Z7UmhyusIB4
Isometric projection of frustum of a right circular cone	https://www.youtube.com/watch?v=xLzbS_umhMM
Combination of two solids – hexagonal prism and right circular cylinder	https://www.youtube.com/watch?v=LW06wwWI5Ns
Combination of two solids -triangular pyramid and hemisphere	https://www.youtube.com/watch?v=47xhoP503IU
Combination of two solids -triangular prism and cube	https://www.youtube.com/watch?v=KdydTRrQXaM
Combination of Solids – equilateral triangular pyramid and hexagonal prism. :- Draw an isometric Projection of an equilateral triangular pyramid resting vertically and centrally with one base edge, at the back, parallel to V.P. on the top face of a hexagonal prism having two of its rectangular faces parallel to V.P. Side of the triangle = 34mm height of pyramid = 50mm, side of the hexagon = 30mm and height of the prism = 60mm.	https://www.youtube.com/watch?v=eUHAAC4JsRM
Combination of Solids – right circular cone and pentagonal prism :- Draw an Isometric Projection of a right circular cone resting vertically and centrally on the top horizontal rectangle of a pentagonal prism having its axis parallel to H.P. and V.P. both. Side of pentagon = 34mm, length of the prism = 80mm, diameter of the cone = 44mm and height of cone = 60mm.	https://www.youtube.com/watch?v=6QbTYQH1vKo
Combination of Solids – right circular cone and cuboid :-	https://www.youtube.com/watch?v=wAH7N6OsRhW

Unit II: Machine Drawing	
A. (i) Drawing to full size scale with instruments	
Standard profile of square thread	https://www.youtube.com/watch?v=oh0D-AQjf6U
Standard profile of knuckle thread	https://www.youtube.com/watch?v=NctOljg1GOI
B.S.W Thread	https://www.youtube.com/watch?v=uGkGgwF-qbE
Metric Thread	https://www.youtube.com/watch?v=L99lnAqVK1A
Metric Thread (external and internal)	https://www.youtube.com/watch?v=onZ3QlwWozk
Hexagonal Bolt	https://www.youtube.com/watch?v=RbkXnN6T5wk
	https://www.youtube.com/watch?v=vIK5j6HAjXo
Square Headed Bolt and Square Nut	https://www.youtube.com/watch?v=KnhBjLUNik4
Hexagonal Headed Bolt and Hexagonal Nut	https://www.youtube.com/watch?v=r5C9nIKoVos
Tee headed Bolts	
Hook bolt	
(ii)Free- hand sketches	
Plain Studs	
Plain with square-neck and collar	
Round headed screw	
Cheese headed screw	
90 degree flat counter sunk flat head	
Hexagonal socket-head screw	
Grub screw	
Types of rivets:-Snap head	
Pan head-without tampered neck	
60 degree counter flat head	
Flat head	
Types of sunk-keys	
Rectangular sunk taper key	
Woodruff Key	
Double-headed feather key	
Gib head on both ends	
B. Assembled views of the following machine parts:-	
1. Bearings	
(i) Open - Bearing	https://www.youtube.com/watch?v=HKLAFFKpBO

(ii)	Bushed-bearing	https://www.youtube.com/watch?v=mZkprNZHkAw
(iii)	Footstep- Bearing (only sectional front -view will be asked)	https://www.youtube.com/watch?v=WyjG5rp65OY
	Footstep- Bearing	https://www.youtube.com/watch?v=De-qL0TC8hM
	Footstep- Bearing	https://www.youtube.com/watch?v=3q5sJXWe-no
(iv)	Simple Plummer – Block (only sectional front view will be asked with only round brases)	https://www.youtube.com/watch?v=J0plhX4XGvw
	Simple Plummer – Block (only sectional front view will be asked with only round brases)	https://www.youtube.com/watch?v=WP6IUp-cOp0
2. Rod Joints		
(i)	Cotter-,Joints for circular - rods (socket and spigot joint and cotter joint) (in English)	https://www.youtube.com/watch?v=5OG5nfCwdng
(ii)	Cotter-,Joints for round- rods (Sleeve and cotter joint) (in English)	https://www.youtube.com/watch?v=mlgmVleA-Zw
(iii)	Cotter-,Joints for square- rods (Gib and cotter joint) (in English)	https://www.youtube.com/watch?v=m3B7CsHQI5o
(ii)	Knuckle-joints (only sectional front view will be asked)	https://www.youtube.com/watch?v=HHcza2uel3A
	Knuckle-joints (only for 3D reference of students)	https://www.youtube.com/watch?v=SGfLx9YsCSQ
3. Tie-rod and Pipe- joint		
(i)	Turnbuckle	https://www.youtube.com/watch?v=a03ZIS_ONM
(ii)	Flange pipe joint.	https://www.youtube.com/watch?v=A-ov0PQFj0M
4. Couplings		
(i)	Unprotected flange (having socket and spring arrangement)	https://www.youtube.com/watch?v=7Ab-1KOzuew
(ii)	Protected flange coupling (assembly)	https://www.youtube.com/watch?v=2sAU7crQUqU
5. Pulleys		
(i)	Solid cast Iron Pulley (upto 200mm diameter) having solid web	
(ii)	Single Groove pulley (upto 200mm diameter)	https://www.youtube.com/watch?v=QSQ3xP7KS3M