डिजीईटी नवी दिल्ली यांचे NSQF अभ्यासक्रमावर आधारीत

शिल्प कारागीर प्रशिक्षण योजना

औद्योगिक प्रशिक्षण संस्था

प्रथम वर्ष अभियांत्रिकी व्यवसाय ग्रुप

कार्यशाळा गणित व शास्त्र

(Workshop Calculation & Science)

डिजीटल बुक

(Digital Book)

डिझाईन :- जयराम ससाणे,गणित निदेशक,ITI,नाशिक

मार्गदर्शक :- प्रशांत बडगुजर,गटनिदेशक,ITI,नाशिक
राज्य समन्वयक,महाराष्ट्र

औद्योगिक प्रशिक्षण संस्थेत प्रथम वर्ष प्रशिक्षण घेणा-या सर्व प्रशिक्षणार्थ्यांना या डिजीटल बुक मध्ये डिजीईटी नवी दिल्ली यांचे NSQF अभ्यासक्रमानुसार सर्व पाठाचा सैध्दांतीक भाग जो प्रशिक्षणार्थ्यांना को-या वहीत लिहीता येईल,त्यावरील सोडविलेली उदाहरणे,संबधित पाठाचे व्हिडीयो, वहीत सोडविण्यासाठी उदाहरणे,Online Test इ. सर्व माहिती देण्यात आलेली आहे दिलेल्या इमेज लिंक वर क्लिक केल्यास संबधित पाठाची माहिती आपणास मिळेल.

(Common for CTS Engineering trades during 1st year)

Sl. No.	Syllabus	Time in hrs.
I.	**Unit, Fractions**	**4**
1	Classification of Unit System	
2	Fundamental and Derived Units F.P.S, C.G.S, M.K.S and SI Units	
3	Measurement Units and Conversion	
4	Factors, HCF, LCM and Problems	
5	Fractions – Addition, Subtraction, Multiplication and Division	
6	Decimal Fractions - – Addition, Subtraction, Multiplication and Division	
8	Solving Problems by using calculator	
II.	**Square Root: Ratio and Proportions, Percentage**	**6**
1	Square and Square Root	
2	Simple problems using calculator	
3	Application of Pythagoras Theorem and related problems	
4	Ratio and Proportions	
5	Direct and Indirect proportion	
6	Percentage	
7	Changing percentage to decimal	
III.	**Material Science**	**8**
1	Types of metals	
2	Physical and Mechanical Properties of metals	
3	Types of ferrous and non-ferrous metals	
4	Introduction of iron and cast iron	
5	Difference between iron and steel, alloy steel and carbon steel	
6	Properties and uses of rubber, timber and insulating materials	
IV.	**Mass, Weight, Volume, and Density**	**4**
1	Mass, volume, density, weight & specific gravity	
2	Related problems for mass, volume, density, weight & specific gravity	
V.	**Speed and Velocity, Work Power and Energy**	**12**
1	Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation	
2	Related problems on speed and velocity	
3	Potential energy, Kinetic Energy and related problems with related problems	
4	Work, power, energy, HP, IHP, BHP and efficiency	
VI.	**Heat &Temperature and Pressure**	**12**
1	Concept of heat and temperature, effects of heat, difference between heat and temperature	
2	Scales of temperature, Celsius, Farenhieght,Kelvin and Conversion between scales of temperature	
3	Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation	
4	Co-efficient of linear expansion and related problems with assignments	
5	Problem of Heat loss and heat gain with assignments	
6	Thermal conductivity and insulators	
7	Boiling point and melting point of different metals and Nonmetals	
8	Concept of pressure and its units in different system	

	Basic Electricity	**12**
1	Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC and their comparison, voltage , resistance and their units	
2	Conductor, Insulator, types of connections- Series and Parallel,	
	Ohm's Law, relation between VIR & related problems	
3	Electrical power, energy and their units, calculation with assignments	
4	Magnetic induction, self and mutual inductance and EMF generation	
5	Electrical Power, HP, Energy and units of electrical energy	
VIII.	**Mensuration**	**10**
1	Area and perimeter of square, rectangle and parallelogram	
2	Area an Perimeter of Triangle	
3	Area and Perimeter of Circle, Semi-circle, circular ring, sector of circle, hexagon and ellipse	
4	Surface area and Volume of solids- cube, cuboids, cylinder, sphere and hollow cylinder	
5	Finding lateral surface area , total surface area and capacity in liters of hexagonal, conical and cylindrical shaped vessels	
IX.	**Levers and Simple Machines**	**6**
1	Simple machines, Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relation between efficiency, velocity ratio and mechanical advantage	
2	Lever and its types	
X.	**Trigonometry**	**6**
1	Measurement of Angle, Trigonometrical Ratios, Trigonometric Table	
2	Trigonometry-Application in calculating height and distance (Simple Applications)	
	Total	**80**

Unit, Fractions
एकके मापन व रुपातंरे व
संख्या परिचय व अपुर्णांक

पाठाच्या माहितीसाठी इमेज वर क्लिक करा

Square Root: Ratio and Proportions, Percentage

वर्ग आणि वर्गमुळ व गुणोत्तर व प्रमाण व शेकडेवारी

पाठाच्या माहितीसाठी इमेज वर क्लिक करा

Material Science

धातुशास्त्र

पाठाच्या माहितीसाठी इमेज वर क्लिक करा

Mass, Weight, Volume, and Density
वस्तुमान,वजन,घनता व विशिष्ट गुरुत्व

पाठाच्या माहितीसाठी इमेज वर क्लिक करा

Speed and Velocity, Work Power and Energy

गती व वेग आणी कार्य,शक्ती व उर्जा

पाठाच्या माहितीसाठी इमेज वर क्लिक करा

Heat &Temperature and Pressure

उष्णता व तापमान व दाब

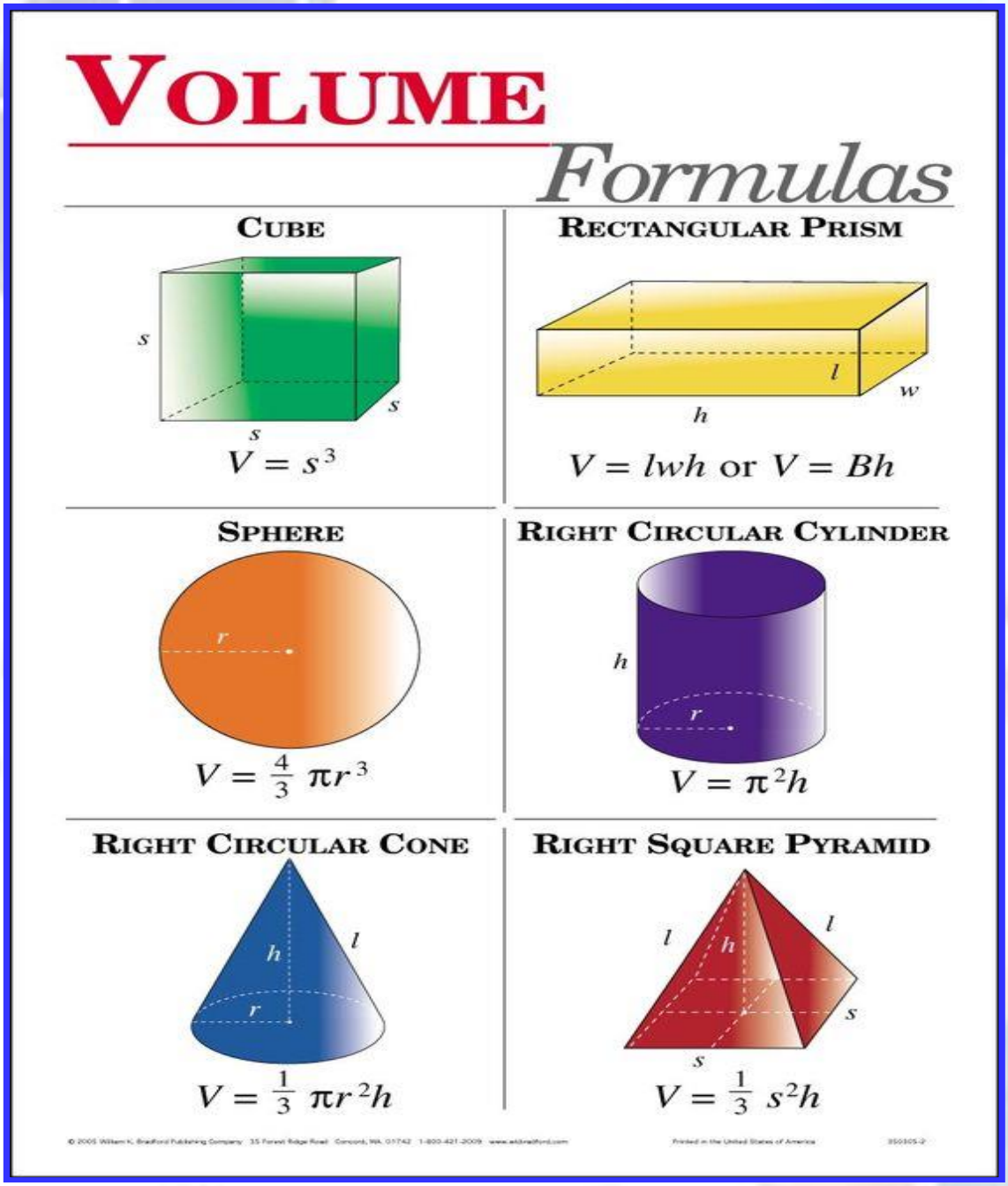
पाठाच्या माहितीसाठी इमेज वर क्लिक करा

Basic Electricity
मुलभुत विद्युत

पाठाच्या माहितीसाठी इमेज वर क्लिक करा

Mensuration (Area and Volume)
महत्वमापन (क्षेत्रफळ व आकारमान)

पाठाच्या माहितीसाठी इमेज वर क्लिक करा



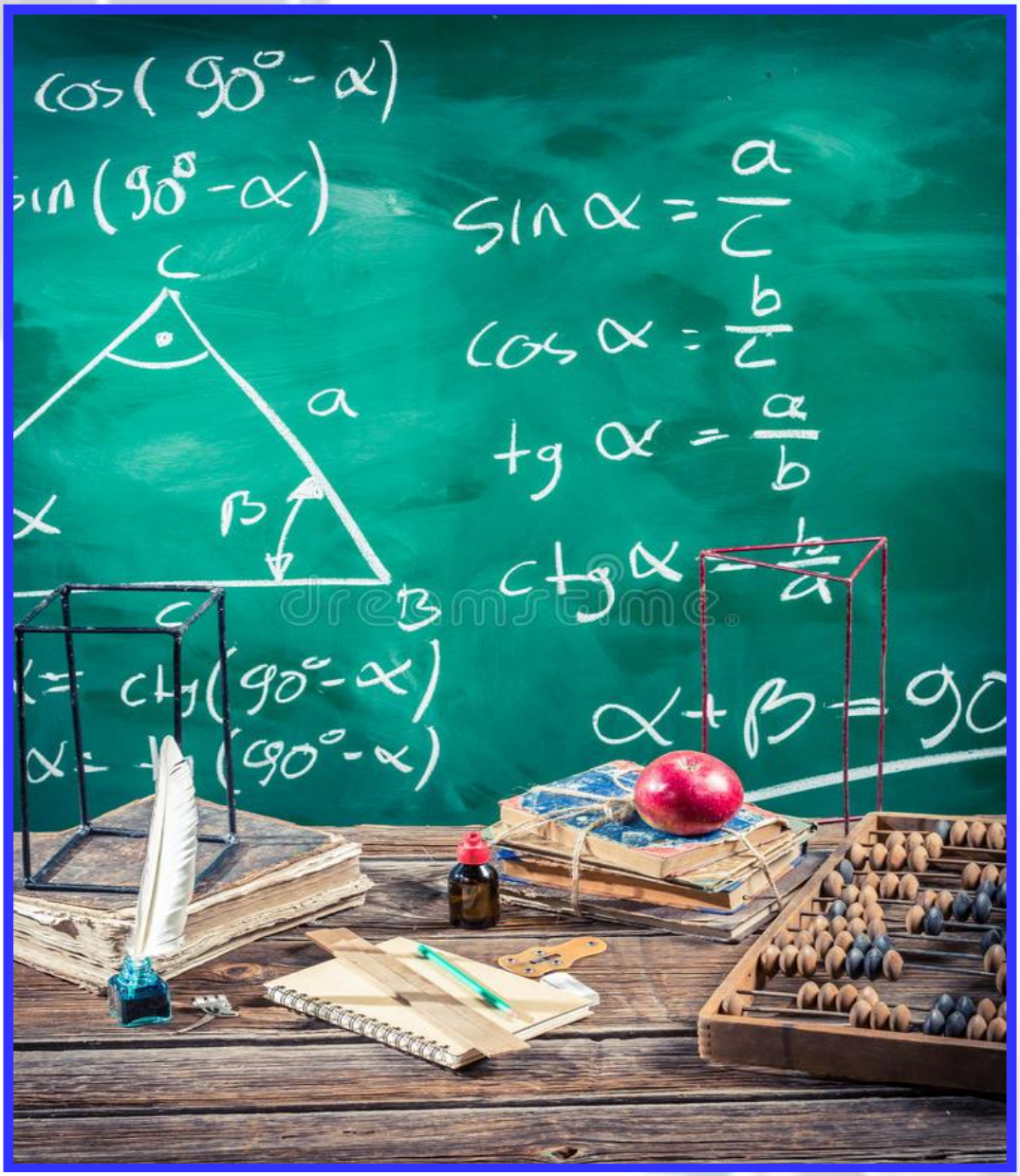
Levers and Simple Machines

तरफ व साधी यंत्रे

पाठाच्या माहितीसाठी इमेज वर क्लिक करा

Trigonometry
त्रिकोणमीती

पाठाच्या माहितीसाठी इमेज वर क्लिक करा



धन्यवाद (Thanks)