

INDEX

NAME: Dipali S. Kadam Class: SYBTE Sem: S2 ROLL NO.: 2132

S. No.	Date	Title	Page No.	Teacher's Sign/Remarks
1]	19-4-22	Tutorial - I	1-6	10/10/19/19
2]	26-4-22	Tutorial - II		10/10/20/19
3]	10-5-22	Tutorial - III		10/10/21/19
4]	17-5-22	Tutorial - IV		10/10/22/19
5]	18-5-22	Tutorial - IV		10/10/23/19
6]	31-5-22	Tutorial - VI		10/10/24/19
7]	7-6-22	Tutorial - VII		10/10/25/19
8]	14-6-22	Tutorial - VIII		10/10/26/19
9]	21-6-22	Tutorial - IX		10/10/27/19
10]	28-6-22	Tutorial - X		10/10/28/19

Tutorial No.-1

Page: 1

Date: / /

que-1] A Furnace wall made of brick work 15 cm thick & thermal conductivity $4 \text{ W/m}^\circ\text{C}$ is lined on inside with silica bricks 25 cm thick and thermal conductivity $1.2 \text{ W/m}^\circ\text{C}$ & the next layer of magnesite brick 25 cm thick & thermal conductivity $1.8 \text{ W/m}^\circ\text{C}$. inner side temp. of the wall (silica brick side) is 260°C & outside temp. is 30°C . Calculate

- Rate of heat flow through the wall.
- Interface temperatures T_2 & T_3 .

que-2] A Furnace wall made up of steel plate having 7 cm thickness & $40 \text{ W/m}^\circ\text{C}$ thermal conductivity is lined on inside with fire clay bricks having thickness 25 cm & thermal conductivity $0.27 \text{ W/m}^\circ\text{C}$ & lined on outside with magnesite bricks having 35 cm thickness and thermal conductivity $2.6 \text{ W/m}^\circ\text{C}$. The inner side temp. of the wall is 750°C & outside temp. is 40°C . Calculate

- Rate of heat flow through the wall at steady state temp.
- Interface temperatures
- If the heat flow is to be reduced to 50% by means of an air gap betⁿ the steel plate & magnesite brick. Calculate width of air gap required.

P.V.P.I.T.Budhgaon
Department of Civil Engineering
AY 2021-22 (Sem I)
Assignment No 1

Module No 1: Basic Properties of Material

Class: TY

Division: A

Subject: Materials, Testing and Evaluation

Q.1 Describe in details various properties of metals along with their application .

Q.2 Briefly describe importance of materials and enlist various mechanical properties of materials.

Q.3 Describe in details RCC and various properties of RCC with their advantages and disadvantages.

Q.4 Explain elastic properties of materials in detail.

P.V.P.I.T.Budhgaon

Department of Civil Engineering

AY 2021-22 (Sem I)

Tutorial No. 1

Subject : Design of Steel Structures (BTCVC501)

Topic : Introduction to Design of Steel Structures

- State various advantages and disadvantages of steel structures.
- Write note on methods for designing the steel structures
- What are the different types of sections available in steel structures?
Explain with neat sketches.
- What are the different loads considered for designing the steel structures?
- Write note on loads and load combinations used in designing steel structures.

Home Assignments:

Assignment No 1

1. Explain Process of Programming in brief.
2. Explain Procedure for Testing & Debugging of Program.
3. Write a short note on:
 - a) IDE Commands.
 - b) Flow charts
 - c) Algorithms

Assignment No 2

1. What is the difference between fundamental & derived data types?
2. How can character data type be used to represent integers?
3. Write a short note on:
 - a) relational and logical operators
 - b) type conversions
 - c) Variable Vs Constants.

Assignment No 3

1. Write a program to find out whether a number is odd or even.
2. What do you mean by block of code?
3. Differentiate between break & continue statement.
4. The output of the code below is:

```
#include<stdio.h>
void main()
{
int x=5;
if(x<1)
printf("Hello");
if(x==5)
printf("hi");
else
printf("no");
}
```

- a) Hi
- b) Hello
- c) No
- d) None Of the Mentioned,

Assignment No 4

- 1) What do you mean by function? Elaborate its definition with the help of example.
- 2) Define Scope Rules for Function.
- 3) What do you mean by user defined function? Explain with help of example.
- 4) How to pass argument to function, Explain it with the help of example.
- 5) Write a note on Recursion.

Assignment No 5

- 1) What do you mean by array? Discuss the basic features of the same.
- 2) Discuss Types of Array with the help of example.
- 3) Elaborate in detail the 2 dimensional arrays in C.
- 4) How to access 2 dimensional Arrays in C. Write a simple program to justify.

Assignment No 6

- 1) How to define structure and how to access the structure member? Explain with help of example.
- 2) How to use Structures as function Arguments?
- 3) Discuss the pointers to structures with help of program.
- 4) Discuss the self-referential Structures with the help of example
- 5) Write a short note on Standard I/O Library Functions in C.



Dr.V.P.S.S.M.'s
Padmabhooshan Vasantodada Patil Institute of Technology,
Budhgaon- 416 304.
Department of Computer Science and Engineering

Tutorial No 1

Subject- Compiler Design (SEM 2) 2021-22

1. Differentiate between compiler and Interpreter
2. Explain in detail various phases of compilation.
3. Note on- Front end and back end model of compilation.
4. Which are the various compiler construction tools.
5. Describe the errors encountered in different phases of compiler.
6. Discuss the need for group of phases.



Tutorial No 2

Subject- Compiler Design (SEM 2) 2021-22

1. Define the term with example.
 - a) lexeme
 - b) token
 - c) pattern
2. Explain the Role of Lexical Analyzer, Explain interaction between lexical analyzer and parser.
3. Define Regular expression.
4. Explain LEX with suitable example.

Tutorial No 3

Subject- Compiler Design (SEM 2) 2021-22

1. Write a short note on operator precedence parser.
2. Differentiate between LR(0), Canonical LR and LALR items.
3. Compare the top down parsing and bottom up parsing.
4. Define the role of parser
5. Note on-
 1. CFG
 2. Ambiguous Grammar
 3. Left Recursion
 4. Shift Reduced Parser

Electrical Drives

Assignments

2021-22

Assignment No. 1

1. What is power modulator? Explain in detail the different types of power modulators.
2. Draw and explain in brief block diagram of Electrical Drives". Also explain the factors affecting choice of Electrical Drives.
3. What are the advantages of Electric Drives? What are the functions of Power Modulators?
4. Explain four quadrant operation of motor driving hoist with the help of a neat diagram.
5. Explain various components of load torque. Hence draw steady state load torque speed curves for fan, hoist, traction and constant power and explain the same.
6. For motor load system how is equilibrium speed find out? Explain with neat diagram, the method of checking steady state stability of a motor load system showing one stable and one unstable equilibrium point.

Assignment No. 2

1. Explain the operation of a closed loop torque control scheme with neat diagram.
2. Explain How following Speed Transitions are Carried out
 - (i) Increase in the speed in same direction
 - (ii) Decrease in the Speed
 - (iii) Speed Reversal
3. Explain the operation of a closed loop speed control scheme with inner current control loop. What are various functions of inner current control loop?
- 4) Classify and explain types of motor duties.

Assignment No. 3

1. Unsolved problem 5.36 from the book of G. K. Dubey
2. Unsolved problem 5.37 from the book of G. K. Dubey
3. Unsolved problem 5.38 from the book of G. K. Dubey
4. Unsolved problem 5.39 from the book of G. K. Dubey
5. Unsolved problem 5.41 from the book of G. K. Dubey

Assignment No. 4

1. State various methods to obtain variable DC for motor control. Compare them in brief.
2. Explain speed control of separately excited DC motor using combined effect of armature and

field control. Explain with neat diagram the limitations on maximum allowable torque and power for maximum speed.

3. With the help of waveforms describe the operation of Single phase full controlled bridge rectifier fed DC motor drives. Derive the expression for speed Vs torque for continuous conduction.

4. With the help of waveforms describe the operation of Single phase half controlled bridge rectifier fed DC motor drives. Derive the expression for speed Vs torque for continuous conduction.

5. With the help of waveforms describe the operation of three phase half controlled bridge rectifier fed DC motor drives. Derive the expression for speed Vs torque for continuous conduction.

6. With the help of waveforms describe the operation of three phase full controlled bridge rectifier fed DC motor drives. Derive the expression for speed Vs torque for continuous conduction.

Assignment No. 5

1. What is the significance of Dual Converter in DC motor drive? Explain Three Phase Dual Converter fed DC Motor Drive.

2. Explain chopper control of separately excited dc motor during motoring operation. Derive the relation between voltage & duty cycle and motor speed & torque. Draw speed torque curve.

3. Explain chopper control of separately excited dc motor during regenerative braking operation. Derive the relation between voltage & duty cycle and motor speed & torque. Draw speed torque curve.

4. Explain two quadrant chopper controlled separately excited DC motor drive.

5. Explain Closed Loop speed control of thyristor converter fed DC motor drive.

Assignment No. 6

1. Derive an expression for torque developed by IM. Obtain speed Vs torque characteristics.

2. State various methods of speed control of IM. Explain speed control of IM by AC voltage controller.

3. Explain speed control of IM by Pole changing method.

4. What is the need of starters? State it types. Explain DOL starter.

5. Explain modes of operation and variations of I_s , W_{sl} , T and P_m with frequency for IM.

Assignment No. 7

1. Explain V/f control method of IM drives. Draw corresponding speed torque characteristics. Explain VFVS control scheme.
2. Explain 6 step VSI fed IM drive.
3. Describe the operation of PWM inverter fed IM drives.
4. What is the significance of V/f ratio in IM? Explain Closed loop control of VSI fed IM drive.
5. Explain CSI fed IM drive.
6. Explain Closed loop speed control of CSI fed IM drive.

Assignment No. 8

1. Explain conventional rotor resistance control method of IM drive. What is the advantage of rotor resistance control.
2. What is slip power? Explain Static Kramer Drive.
3. Explain rotor resistance control of IM employing semiconductor converters and its closed loop control. Explain advantages of this method.
4. Explain static Scherbius drive and its closed loop control. Draw speed draw curves for different firing angles.

Assignment No. 9

1. State and explain the modes of speed control of synchronous motor on the basis of frequency (or VSI fed).
2. Explain load commutated inverter fed synchronous motor drive.
3. Write a short note on types of synchronous motors.
4. Obtain an expression for torque developed in Cylindrical Rotor Wound Field Motor and salient Pole Wound Field Motor.
5. Explain variable frequency control of multiple synchronous motors with block diagram.
6. What do you mean by load commutation? Explain closed loop speed control of load commutated inverter fed synchronous motor drive.

POWER SYSTEM

S. Y. B. Tech

2021-22

Tutorial No. 1

- 1) Enlist and explain different sources of electrical energy.
- 2) Enlist and explain different types of turbines and their selection.
- 3) A consumer has following connected load: 10 lamps each of 60 W, 2 heaters each of 100 W, Maximum Demand 1500 W. On the average he uses 8 lamps for 5 hrs per day, each heater 3 hrs per day. Find i) average load, ii) monthly energy consumption, iii) load factor.
- 4) Explain load duration curve and factors used in electricity supply industry.
- 5) Explain Hydroelectric Power Plant in detail.

Tutorial No. 2

1. Explain various types of Excitation Systems.
2. Write a short note on Major Electric Equipment in control room.
3. Find an expression for Overall flux linkages due to a single current carrying conductor.
4. Derive an expression for the loop inductance of a single phase line.
5. Derive an expression for the inductance per phase for a 3-phase overhead transmission line when conductors are unsymmetrically placed but the line is completely transposed.

Tutorial No. 3

1. What do you understand by electric potential? Derive an expression for electric potential (i) at a charged single conductor (ii) at a conductor in a group of charged conductors
2. Derive an expression for the capacitance of a single phase overhead transmission line.
3. Deduce an expression for line to neutral capacitance for a 3-phase overhead transmission line when the conductors are symmetrically placed
4. Deduce an expression for line to neutral capacitance for a 3-phase overhead transmission line when the conductors are unsymmetrically placed but transposed

Tutorial No. 4

- 1) Write a short note on ACSR conductor.
- 2) Discuss Types of supports with suitable diagrams.
- 3) State type of insulators and explain Suspension type insulators.
- 4) Derive an expression for String Efficiency for 3 disc string.
- 5) Discuss the methods of improving string efficiency.
- 6) Explain Ferranti effect in Transmission Line.

Tutorial No. 5

- 1) Explain the concept of sag.
- 2) Derive an expression for sag when supports are at equal levels.
- 3) Derive an expression for sag when supports are at unequal levels.
- 4) Explain the effect of wind and ice coating on sag with appropriate equations.
- 5) Explain the phenomenon of corona formation. Also explain factors affecting corona and methods of reducing corona effect.

Tutorial No. 6

Question nos. 4 and 7 are optional.

- 1) Explain classification of overhead transmission line with figures.
- 2) Deduce an expression for voltage regulation and transmission efficiency of a short transmission line, giving the vector diagram.
- 3) What is the effect of load power factor on regulation and efficiency of a transmission line?
- 4) Explain end condenser method of medium transmission line.
- 5) Explain nominal T method of medium transmission line.
- 6) Explain nominal pi-method of medium transmission line.
- 7) Using rigorous method, derive expressions for sending end voltage and current for a long transmission line.
- 8) Evaluate the generalized circuit constants for
 - (i) short transmission line
 - (ii) medium line — nominal T method
 - (iii) medium line — nominal π method

Electronics Engineering Department

Home assignment _1

- 1) Explain the cellular system architecture in detail.
- 2) Explain in detail the evolution of wireless communication?
- 3) Explain frequency reuse concept.
- 4) Discuss and explain the multipath propagation
- 5) Explain in detail the different techniques used to improve coverage & capacity of cellular system.
- 6) What are the different types of handover and explain that in detail?
- 7) Short note on : a) Trunking and grade of service b) Co-channel interference
c) Adjacent channel interference

Home assignment _2

- 1) What is channel assignment? What are the types?
- 2) What is handoff? Explain different handoff strategies.
- 3) Explain microcell zone concept in detail
- 4) Design Cellular System in Worst-Case Scenario with an Omni directional Antenna
- 5) If a signal-to-interference ratio of 15dB is required for satisfactory forward channel performance of a cellular system, what is the frequency reuse factor and cluster size that should be used for maximum capacity if the path loss exponent is a) 4 & b) 3? Assume that there are six co-channel cells in the first tier, and all of them are at the same distance from the mobile.
- 6) We consider a cellular system in which total available voice channels to handle the traffic are 960. The area of each cell is 6 km² and the total coverage area of the system is 2000 km². Calculate (a) the system capacity if the cluster size, N (reuse factor), is 4 and (b) the system capacity if the cluster size is 7. How many times would a cluster of size 4 have to be replicated to cover the entire cellular area? Does decreasing the reuse factor N increase the system capacity? Explain.
- 7) Write note on: "Umbrella Cell Approach"

Home assignment _3

- 1) Explain in detail about GSM architecture with suitable diagram.
- 2) Explain the GSM services in detail
- 3) Explain with neat block diagram, the GSM network interface.
- 4) Explain steps in call setup in GSM system.

- 5) Write short note on “GPRS”

Home assignment _4

- 1) Draw and explain block diagram of OFDM system.
- 2) Why it is necessary to apply pulse shaping and windowing in OFDM
- 3) Explain the methods used in OFDM system to reduce ISI effect over wireless channel.
- 4) Explain synchronization problems arises in OFDM system
- 5) Write note on “Selection Parameters for modulation”

Home assignment _5

- 1) Explain with neat diagram DSSS system.
- 2) Explain CDMA call processing with flow diagram.
- 3) How to classify logical channels in CDMA system? Explain.
- 4) What is Power Control?
- 5) What is Soft Handover/Handoff?
- 6) Write note on
 - a) Frame Quality and BER Requirements
 - b) Critical challenges of CDMA, TIA IS95 System

Home assignment _6

- 1) Explain with neat diagram DSSS system.
- 2) Explain CDMA call processing with flow diagram.
- 3) How to classify logical channels in CDMA system? Explain.
- 4) What is Power Control?
- 5) What is Soft Handover/Handoff?
- 6) Write note on
 - a) Frame Quality and BER Requirements
 - b) Critical challenges of CDMA, TIA IS95 System

Dr. V.P.S.S.M's
Padmabhooshan Vasandraodada Patil Institute of Technology,
Budhgaon

Department of Electronics & Telecommunication Engineering

Subject: Introduction to IoT

A.Y. 2021-2022 Sem-II

Assignment No.1

1. Write a note on sensors and transducers.
2. Explain different types of actuators.
3. Discuss challenges in IoT implementation.

Assignment No.2

1. Explain RFID technology and its working principle with diagram.
2. With suitable diagram explain MQTT communication process.
3. Discuss ZigBee Communication standard.

Assignment No.3

1. Explain types and working principle of NFC.
2. Write a note on Bluetooth Modes.
3. Explain applications of WSN.

Assignment No.4

1. Explain Coverage Problems in Static WSNs.
2. Write a note on Gateway Selection in FANETs.
3. Discuss UAV Network Topology.

Dr. V.P.S.S.M's
Padmabhooshan Vasantodada Patil Institute of Technology,
Budhgaon

Department of Electronics & Telecommunication Engineering

Subject: Introduction to IoT

A.Y. 2021-2022 Sem-II

Assignment No.5

1. Write a note on Device Interoperability.
2. Describe control statements and loop statements in Arduino.
3. Write a note on sensors and actuators.

Assignment No.6

1. Explain exception handling in Python.
2. Discuss various file read/write operations in Python.

Assignment No.7

1. Draw and explain SDN architecture.
2. Explain different types of architectures in SDN.
3. What are the Benefits of Integrating SDN in IoT?

Assignment No.8

1. Explain NIST Visual Model of Cloud Computing using diagram.
2. Describe different cloud Service Models.
3. Explain Software-as-a-Service in detail.

Tutorial No :- 1

- ① Uniform plane wave at frequency of 300 MHz travels in vacuum along +Y direction the electric field of the wave at some instant is given as $\vec{E} = 3\vec{x} + 5\vec{z}$. Find phase constant of the wave at also vector magnetic field.
- ② State & explain Gauss's law
- ③ State & explain point form of Gauss's law

Tutorial No :- 2

- ① find the vector \vec{OP} & unit vector \hat{OP} if $O = (1, 5, 3)$, $P = (-3, -4, 2)$.
- ② Three points are given as follows $P = (2, 1, 3)$, $Q = (-1, 2, 1)$, $R = (1, 0, 1)$ find :-
 - i) Vector from P to Q
 - ii) Unit vector from R to P
 - iii) Distance betⁿ P to R.

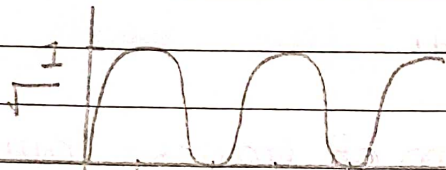
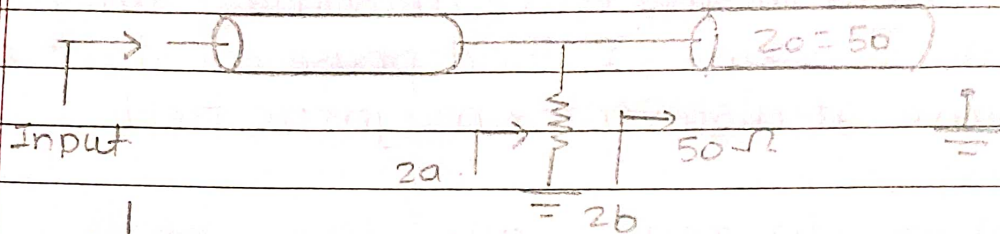
Tutorial No :- 3

- ① Explain the surface & line & volume integral
- ② Explain in detail gradient, divergence & curl operation.
- ③ What are the different types of co-ordinate system & explain?

Tutorial No :- 4

- ① A microwave circuit consisting of lossless transmission line T_1 & T_2 is shown in the fig. the plot shows magnitude of input reflection coefficients has a function of frequency F .

The phase velocity of the signal in the transmission line is 2×10^8 m/s find L .



- ② An air-line has characteristic impedance of 70Ω & phase constant of 3 radians/m at 100 MHz. Calculate inductance/m & capacitance/m of line.
- ③ Derive eqⁿ for power in transmission line.

Department : Instrumentation Engineering

Class : Final Year BTech (VII)

Subject : Process Instrumentation & Control

Home Assignment No 01

- 1] Describe heat exchanger control strategies
- 2] Explain distillation column level control

Home Assignment No 02

- 1] Discuss pump selection criteria
- 2] Device system for condition monitoring of pump

Tutorial

(Subject: Process Loop Components)

Chapter 1

1. Explain elements of Process Control loop in detail
2. Explain concept of process variable, set point, controlled variable, manipulated variable, Load Variable.
3. Explain Temperature Control Loop with Process Example
4. Explain Pressure Control Loop with Process Example
5. Explain Flow Control Loop with Process Example
6. Explain Level Control Loop with Process Example
7. What is need of standardization of signal, Explain concept of live and dead zero

Chapter 2

1. Explain Difference between Convertor & Transmitter
2. Explain Two wire & Four wire transmitter in detail
3. Explain Square Root Extractor in detail
4. Explain application of DPT for flow and Level Measurement.
5. Explain types of Transmitters

Chapter 3

1. What is Control Valve? Explain different body parts of control valve
2. Explain Control Valve Characteristics in detail
3. Explain Cavitation & Flashing in control valve
4. Explain selection criteria for control valve
5. List out the types of control valves, explain any one.
6. Explain concept of Control valve coefficient.
7. Explain Types of actuators in detail.

Chapter 4

1. Explain PID Controller
2. Explain digital PID Controller
3. Write a short note on Process Reaction Curve Method
4. Explain PLC hardware in detail
5. Explain block diagram of PLC in detail

6. Explain the concept of anti-reset wind up.
7. Write a short note on ZN Method
8. List out the PLC Programming Languages, Explain ladder diagram with example.
9. Explain Control modes in detail.
10. Develop a ladder diagram for motor on and off application
11. Write a short note on Frequency Response Method.

Chapter 5

1. Explain Synchro transmitter and receiver in detail
2. List out types of control panel. Explain any one type of control panel
3. Write a short note on Alarm Annunciator
4. Write a short note on Gyroscope Indicators

1) Assignments (Sample Copy)

Subject: Manufacturing Processes-III Class : BTech

Assignment No.1

1. Define CNC. Explain with neat sketch the components of CNC machines.
2. Explain with neat sketch types of linear motion guide ways.
3. Explain with neat sketch Ball screw mechanism in CNC.
4. Write short notes on:
 - a. Encoders
 - b. Tachometers
 - c. Linear motors
5. Explain with neat sketch CNC drives?

Assignment No.2

CNC tooling & Programming

1. With neat sketch explain Automatic tool changers (ATC)?
2. With neat sketch explain Automatic Pallet Changers (APC)?
3. Explain the steps in part programming?
4. Write short notes on following
 - a. NC words
 - b. NC data format
 - c. Canned cycle
 - d. APT Language
5. Explain computer assisted part programming with neat sketch?

Assignment No.3

Advanced Machining Processes

1. Explain why non-conventional machining processes are used? How they are classified?
2. What is “Electrical Discharge Machining (EDM)”? Explain its principle with the help of suitable diagram? State the advantages, disadvantages & applications of EDM?
3. Explain with neat sketch the principle & working of Electro-chemical machining processes (ECM). List the advantages, disadvantages and applications of ECM?
4. Describe briefly “Electro-Chemical Grinding (ECG)” process. State also its advantages, disadvantages and applications.

Assignment No. 4

Surface Treatment & Coating

Q.1 Explain Mechanical Plating & Cladding?

Q.2 Explain terms Electro plating, Electroless Plating & Electro forming Processes?

Q.3 Write Short Notes on:

- a. Thermal spraying
- b. Vapour deposition
- c. Laser treatments
- d. Porcelain enamelling
- e. Conversion coating
- f. Diamond coating
- g. Hot dipping

Assignment No. 5

Rapid Prototyping

Q.1. What is rapid prototyping? What are its types?

Q.2. Explain with neat sketch Fused deposition Modeling?

Q.3. Explain with neat sketch 3D printing?

Q.4. Explain with neat sketch Laminated Object Manufacturing?

Q.5. Explain with neat sketch Solid ground Curing?

Q.6. Explain with neat sketch direct manufacturing & rapid tooling?

Tutorials (Sample Copy)

Subject: Manufacturing Process -II Class: TY BTech

Unit 1: Abrasive Machining and Finishing Operations

Tutorial No 1

1. Explain different bond types of grinding wheel.
2. Explain different wheel grades and structures of grinding wheel.
3. Explain different types of abrasives.
4. Explain different types of grinding operations.

Tutorial No. 2 Mechanics of Metal Cutting

1. Explain Geometry of single point cutting tools with neat sketch
2. Explain merchant circle with neat sketch
3. Explain theory of Lee and Shaffer
4. Derive equation for chip thickness ratio and shear angle

Tutorial No. 3: Thermal Aspects, Tool Wear & Machinability

Q.1 Explain heat generation in metal cutting with neat sketch? Explain causes of heat generation?

Q.2 Define Tool Life? Explain Taylors tool life equation?

Q.3 What is the Function of cutting Fluid? Explain any 5 types of cutting fluid?

Q.4 The Taylorian tool life equation for machining C-40 steel with a 18.4.1 HSS cutting tool at a feed of 0.2mm/min & a depth of cut of 2mm is given by $VT^n=C$, where n & C are constants. The following observations have been noted:

V m/min	25	35
T min	90	20

Calculate,

- i) n & C
- ii) Hence recommend the cutting speed for a desired tool life of 60 minutes.

Q.5 A mild steel bar is turned with HSS tool. Determine the tool life for a cutting velocity of 40m/min. If the tool life equation is $VT^{0.2}= 80$. Also determine the cutting speed for 60 minutes tool life.

Tutorial No. 4: Processing of Powder Metals

1. Define powder metallurgy? Explain Basic Process in detail
2. Explain Compaction of Metal Powders in detail
3. Explain Isostatic Pressing in detail
4. Explain Sintering process in detail
5. What are Design Considerations in powder metallurgy? Explain with diagram