



BITT POLYTECHNIC
Getlatu, Ranchi- 835217

BITT-P/NOTICE/2024 – 25/11004

Date: 26.12.2024

NOTICE

Subject: Schedule of 1st Assignment Submission for Diploma 1st Semester
Students (Session: 2024 – 2027)

It is hereby informed to all Diploma 1st Semester (Session: 2024 – 2027) Students that submit their 1st assignment in given schedule & format. Assignment questions are attached below.

Date of Assignment Submission: 06.01.2025

Format of Assignment: Write in A4 Paper and attached with Stick file.

Soy
Principjal
Principjal **BITT Polytechnic**
Getlatu, Ranchi
BITT Polytechnic

Copy to,

1. Hon'ble Chairman, BITTGOI
2. Principal
3. Assistant Registrar
4. All HoDs
5. Controller of Examinations
6. Accounts Department
7. Workshops
8. Library
9. Notice Board
10. Website

Assignment Questions

Subject: Engineering Mathematics

Subject Code: BSC101

1. Evaluate $2 \tan^2 45^\circ + \cos^2 30^\circ - \sin^2 60^\circ$.

(i) $\tan 48^\circ \tan 23^\circ \tan 42^\circ \tan 67^\circ = 1$

(ii) $\cos 38^\circ \cos 52^\circ - \sin 38^\circ \sin 52^\circ = 0$

2. Prove the identities:

$$\sqrt{\frac{1 + \sin A}{1 - \sin A}} = \sec A + \tan A$$

3. Find the radian measure corresponding to the following degree measure

(i) 25°

(ii) -240°

(iii) $40^\circ 20'$

4. Find the value of other five trigometry function in

$\tan x = -\frac{5}{12}$, X lies in second quadrant

$\sin x = \frac{3}{5}$, X lies in second quadrant

5. Prove that the following

(i) $\sin 2x = \frac{2 \tan x}{1 + \tan^2 x}$

(ii) $\cos 3x = 4 \cos^3 x - 3 \cos x$

(iii) $\tan 3x = \frac{3 \tan x - \tan^3 x}{1 - 3 \tan^2 x}$

6. Prove that

$$\frac{\sin(x+y)}{\sin(x-y)} = \frac{\tan x + \tan y}{\tan x - \tan y}$$

7. Show that: $\tan 3x \tan 2x \tan x = \tan 3x - \tan 2x - \tan x$

Subject: Engineering Chemistry

Subject Code: BSC103

1. Explain Bohr's model of atomic theory. What is the Postulates and limitation of Bohr's Model of an Atom?
2. Write distinction between electrovalent & covalent compounds.
3. Explain Faraday's first & second law of Electrolysis.
4. Explain construction and working of Electrochemical Cells & Batteries.
5. Write mechanical properties metals with example.
6. Write distinction between thermosetting and thermoplastic.
7. Write Engineering Applications of Plastic based on their properties.
8. Write distinction between natural & synthetic rubber.
9. What is the type of air pollutants and their Sources & Effects?
10. Write causes, effects & control measures of ozone depletion & Green House Effects.

Subject: Engineering Physics

Subject Code: BSC102

1. Explain stress and strain with their types.
2. What is Hooke's law? Write about Young's modulus, bulk modulus, modulus of rigidity.
3. Draw and explain Stress and Strain diagram.
4. What is viscosity? Write Newton's law of viscosity, coefficient of viscosity and its S.I. unit.
5. Write three modes of transmission of heat -conduction, convection and radiation, good and bad conductor of heat with examples.
6. Write law of thermal conductivity, coefficient of thermal conductivity and its S.I. unit.
7. What is Boyle's law, Charle's law, Gay Lussac's law?
8. What is Isothermal and adiabatic expansion of gas.
9. What is the effect of impurity and temperature on surface tension?
10. Write least count and range of vernier caliper, micrometer screw gauge

BRANCH SUBJECT

Branch: Mechanical Engineering

Subject: Mechanical Science & Engineering

Subject Code: MEC101

1. Write Classification of engineering materials.
2. Write physical and Mechanical properties of metals.
3. What is cast iron? What is the type of cast iron?
4. What is Steel? What is the type of Steel?
5. What is heat treatment Process? Explain the types of heat treatment process.
6. Write and explain type's shaft and material used for shaft.
7. Write construction and working of Flange coupling.
8. Write construction and working of 4 strokes Engine.
9. Write construction and working of 2 strokes Engine.
10. Write difference between Petrol Engine and Diesel Engine.

Branch: Civil Engineering

Subject: Basic Surveying

Subject Code: CIV101

1. What are the objectives, and purposes of surveying?
2. What are the classifications, Principles of Surveying, Units and measurements of Surveying?
3. Describe the procedure of finding the distance between two inter-visible and non inter-visible survey stations.
4. Explain the method of ranging and measuring the length of the given survey line with examples.
5. Explain the corrections in measurement of distance with the chain in a given situation.
6. Write applications of EDM & Rodometer in surveying.
7. Write about errors in compass, Instrumental, Personal and natural cause.
8. Write responsibility of surveyor, Future possible progression and career.
9. What are the errors in surveying, Types-Mistakes, systematic and accidental?
10. What is the method of Chaining?

Branch: Computer Science Engineering/CSIS

Subject: Fundamental of Computer

Subject Code: CSE101

1. Explain the working of logic gates.
2. Write characteristics of number system.
3. Describe the working of logic circuits.
4. Compare combinational and sequential circuits.
5. Write the applications of logic circuits.
6. Write applications of sequential circuits.
7. Describe the characteristics of computer of various generations.
8. Identify the functional units and peripherals of a computer.
9. Explain computer network concepts such as types, protocols
10. Identify and distinguish threats and viruses.

Branch: Electrical Engineering

Subject: Basics of Electrical Power System

Subject Code: EEE101

1. What is the importance of electrical power generation?
2. What is Conventional and non-conventional sources?
3. Write construction and working of hydraulic Power Plant.
4. Write classification of hydroelectric power plants based on the available head of water.
5. Write advantages and disadvantages of hydroelectric power plant.
6. Write working of thermal power plant. Advantages and disadvantages of Thermal power plant.
7. What are the Environmental Impact of Thermal power plants?
8. Write Construction and working of Nuclear power plant.
9. Schematic diagram of a Diesel generator unit and main components. Advantages and Disadvantages of Diesel power plant
10. Schematic diagram of a Gas turbine power plant. Advantages and Disadvantages of Gas turbine plant.