PAGE NO.:

BME ->

unit - 1

1 classification of engg materials

2 cast Iron (Defination / composition / Aplication)

3 carbon steel (—— // ——)

4 mild steel (—— // ——)

5 Iron carbon diagram

6 Define the terms - a) Eutectic Reaction
b) Eutectroid Reaction
c) peritectic Reaction

7. Alloy steel (—— // ——)

8 Effect of alloying element in alloy steel.

9 Stainless steel (—— // ——).

10 Mechanical property (strength / hardness / ductility / toughness / other)

11 Explain tensile testing of steel.

12 Stress : strain diagram for ductile material

PAGE NO.:

13 Stress-strain diagram for cast iron (Brittle material)

14 Hook's law and modulus of elasticity

15 Hardness testing.

16. Impact testing.

17 Fatigue testing

PAGE NO.:

unit - 2

1 Explain the terms - Direct and indirect /measurement errors / hysteresis sensitivity /accuracy and precision).

2 Temprature measurement (principals/methods)

3. Resistance thermometer.

4 Manometer and types of manometer.

5. Explain the process of velocity measurement of fluid (Explain pitot tube)

6 Rota meter → Defination / fig / Application

7 Differences btw venturimeter and orifice meter.

8. what is torque and method of measuring torque.

9 Dynamometer.

10 micro meter.

11 vernier caliper.

12 Dial gauge.

PAGE NO.:

13 Slip gauges

14 Sin Bar

15 what is casting. and pattern

16 Advantages of casting

17 Defects of casting.

18 Types of casting.

19 what is molding? types molding? molding Defects

20 Lathe machine in Details (types 1 parts

21 Lathe operation.

22 Drilling (working / part of Drilling machine)

PAGE NO.:

unit - 3

1 properties of fluid (Density, specific volume specific gravity, viscosity).

2 Difference between dynamic, viscosity and kinematic viscosity

3 Diff btw laminar and turbulant flow

4 diff btw real and ideal fluid.

5 diff btw Newton and Non newtonian fluid.

6. Newton law of viscosity

7 pascal law and hydrostatic law.

8 Bernoulies eqn (Defination / Derivation / Kinematic

9 fluid coupling in details.

10. centrifugal pump.

11 diff btw turbine and pump.

12 difference between impluse turbine and reaction turbine.

PAGE NO.:

13 Working of pelton turbine

14 Draft tube.

15. Reciprocating pump.

PAGE NO.:

unit - 4

1 Explain thermodynamic system (open and closed system)

2 Explain - thermodyamic property / thermodynamic state / internal energy.

3. Zeroth law of thermodynamics

4. first law of thermodynamics

5. Second law of thermodynamics.

6. Boiler classification

7 Differenciate btw fire tube Boiler and water tube Boiler

8 . Cochran Boiler / Lacomatiu Boiler / babcock Boiler.

9 Diff btw mounting and Accessories.

10 What is draught ? types of draught.

1 define - Dryness fraction / latent heat of vaporization / entropy / enthalpy

PAGE NO.:

unit - 5

1 what is steam engine? working principle of steam engine and parts of steam engine

2. P-V diagram of steam engine

3. Carnot cycle.

4 otto cycle

5. Compare otto and diesel cycle

6. Dual cycle

7 diff btw internal combustion engine and steam engine

8. diff btw four strokes petrol engine and 2 strokes engine

9 4 strokes diesel engine

10 Centrifugal compressor.

PAGE NO.:

Physics →

unit - 1

1 Short ans.

Dual nature of matter
Wave function
normalization and orthogonal -
momentum operator
phase velocity
group velocity

2 De - broglie matter waves (Defin / expr.)

3 Davisson - german experiment (Details)

4 Comptons effect (Details)

5 time dependent Schradinger wave equation

6 time independent Schradinger wave equation

7 Expression for energy of particle trapped in a one dimensional box.

8. physical significance of wave function

9 Relation between phase and group velocity

10 Heisenberg uncertainty principle

PAGE NO.

unit - 2

1 Young's Double slit experiment (Details)

2 interference of light.

3 Fresnel's biprism (construction | work.

4 Coherent sources.

5 Newton Ring. (Details)

6. Michelson's interference

7 Mach - Zehnder ~~interomer~~ interferom

8. Diff btw interference and diffraction

9 fraunhofer diffraction from single slit

10 Difference btw Single slit and Double slit experiment

11 Rayleigh criterion of resolution

12 transmission grating

13 Expression for the resolving power of the grating.

PAGE NO.:

Unit - 4

1 Spontaneous emission and stimulated emission of light.

2 Relationship btw einstein coeff A and B.

3 Papulation inversion

4 He - Ne Laser

5 CO_2 Laser

6 Ruby Laser

7 Nd : YAG Laser

8 properties and applications of Laser

9 optical fibre and Application

10. principle of optical fiber and acceptance angle

11 Define expression for numerical aperture of an optical fiber

12 Explain - V Number / Step - index fiber.

PAGE NO.:

Unit - 3

1 Describe free electron theory of metal.

2 Band theory of solid.

3. Semiconductor and types (intrinsic / extrinsic)

4 Explain - N type and P type Conductor

5 Bloch's theorem

6 explain Kronig - penny model.

7 Explain effective mass

8 P-N junction (forward / Backward)

9 characteristics of P-N junction diode

10 Zener diode and I-V characteristics

11 tunnel diode semiconductor device

12 Explain - photo diode / Solar cell / Hall effect.

13 Deduce expression for Hall coefficient

PAGE NO.:

unit - 5

1 gauss theorem

2 stokes theorem

3 maxwell equation

BCE - EM →

unit - I (theory an

1 Define Building material

2 Stone and its classification

3 various test performed on stones

4 Brick, size and classification

5 qualities of good Bricks

6 various field test applied on brick to judge the quality of bricks

7 cement, types and properties

8 Various labarity test for cement

9. timber and its defect

10 Seasoning of timber

11 Define the terms

a) team workability b) Nominal concrete

c) water cement Ratio d) R.C.C e) Slump

f) brick bonds. g) plastering h) painting

PAGE NO.:

12 Define and various types of foundation

13 Types of doors and windows with suitable sketch

14 types of staircases

PAGE NO.:

unit - 2 (T-N)

1 Surveying uses of surveying and its classifications.

2 Define the term Ranging

3 Define survey station

4 What are the offsets in chain surveying

5 Define various types of error in chaining

6 Different types of compass

7 Define the terms

a) Bowditch's Rule b) Bearing of a line

c) fore Bearing and Back Bearing of li

d) local attraction e) Mulling

f) Benchmark g) change point h) Backsid

i) fore sids

PAGE NO:

8 Explain reciprocal levelling.

9. Describe Rise and fall method with suitable examples.

10. What is theodolite and types of theodolite

11 essencial part of the theodolite

12 Describe the plane table surveying

13 describe the various method of the plane table surveying

14 what is EDM and application of EDM.

15 what is EDM method.

PAGE NO.:

unit - 3 (T + W)

1 what do you mean by contours

2 Discuss the properties of contour

3. what is contour interval

4 Explain step by step procedure how the capacity of reservoir can determined using contour maps

5 Describe uses of contour maps and methods of contouring.

6 Discuss various methods used for calculation of area.

7 Describe various volume computation methods

8 What is remote sensing and its applications

PAGE NO.:

unit - 4 (T/W)

1 Define a) Coplanar and concurrent forces

2 Triangle law / parallelogram law / polygon law of forces.

3 Varignon's theorem

4 Define load \ couple \ free body diagram

5 Bows notation

6 Lami's theorem

7 Truss / perfect frame / imperfect frame

8 Different methods to analyse a plane truss

9 friction / limiting friction / static friction

PAGE NO.:

unit - 5 (T + N)

1) difference btw centre of gravity and centroid.

2 parallel axis theorem / perpendicular axis theorem.

3 Radius of gyration

4 product of inertia

5 principal axis and principal moment of intertia

6 Different types of load in beam

7 what is support reaction

8 SFD and BMD

9 point of contraflexure.

PAGE NO.:

BCE →

unit - 1

1 classification of computer

2 Block diagram of computer

3 what is Register and types of Register

4 Explain bus architecture

5 Explain instruction set

6 Explain RAM ? difference between RAM and ROM

7 Explain cache, Register and hard disk

8 explain input and output device with suitable examples

9 Define Software ? difference between system software and application software

10 Discuss computer application in e - business

11 Describe remote sensing and GIS

12 what is operating system ? function of operating system

PAGE NO.:

13 Describe the structure of UNIX operating system

14 How operating system perform file management functions

15 explain process state

16 ms word in own language

17 ms excel in own language

PAGE NO.:

unit - 2

1 Explain Algorithm? write an algorithm from array of n numbers

2 Explain flowchart.

3 why algorithm writing and drawing flowcharts is nessary before write computer program

4 what is programing language?

5 diff btw Assembly language and high level language

6 Explain procedure - oriented programing with example

7 Explain the concept OOP? characteristics of OOP?

8 merits and demerits of oop

9 difference between object oriented programing and procedure oriented programing.

10 What is C++? difine C++ character set

11 What is token

12 Various data types in C++.

13 define - operators / variable Expression

14 Control structure are used in C++

15 Explain the various kinds of looping statement in C++

16 what is an array properties of array.

17 what are control structure in C++ ? two control structure

18. Write a program in C++ to convert the given binary number to decimal number

PAGE NO.:

unit - 3

1 What is an object? types of object

2 What is class

3 What is constructors? Types and characteristics of constructors.

4 What is destructor?

5 Define friend function

6 What is inheritance types of inheritance

7 What is a derived class

8 Write short note polymorphism

9 What is function overloading.

10 What is operator overloading.

11 Write short note on virtual functions

12 Explain function overloading and operator overloading.

13 Difference btw stack and queue

14 What is data structure.

PAGE NO.:

unit - 4

1 Explain computer networking ? Advantage and disadvantage of computer networking?

2 what is protocol.

3 Explain LAN, MAN and WAN.

4 what is topology? Explain types of topology.

5 Explain OSI model.

6 Explain the working of bridge.

7 Explain the working of a router.

8 Write short note on networking device.

9 Explain TCP/IP model in details with diagram.

10 Differentiate ISO-OSI with TCP/IP.

11 Explain the architecture of www briefly.

12 what is commerce?

PAGE NO.:

13 Explain virus, worm, malware, spyware and trojan.

14 Explain the email spoofing attacks.

15 Explain DoS attacks.

16 Explain cyberstalking.

17 Explain logic bombs

18 Explain firewall.

19 Cyber law.

PAGE NO.:

unit - 5

1 Explain DBMS ? merits and demerits of DBMS

2 Discuss file oriented approach

3 Difference between file oriented and database approach

4 Discuss the architecture of DBMS

5 explain data independence

6 Explain data dictionary.

7 Explain DBA. function of DBA

8 Explain pramary Key and alternate Key

9 Explain DDL and DML commands

10 Explain cloud computing.

11 Explain cloud infrastructure

12. cloud development. models.

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