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No. 595



BAE EXERCISES

Petikan Artline

OUTLINES OF EXERCISES

BAE 401 Advanced Engineering maths Exercises

XX An Introduction to theory of complex variables

Page 14⁽¹⁾ - Ex 1 / Page 17⁽²⁾ - Ex 3 / Page 20⁽³⁾ - Ex 3
Page 31⁽⁴⁾ - Ex 10 / Page 43⁽⁵⁾ - Ex 18 / Page 61⁽⁶⁾ - Ex 26
Page 72⁽⁷⁾ - Ex 28 / Page 156⁽⁸⁾ - Ex 14

XX continuous Distribution

Ex 2.1⁽⁹⁾ - Page 20 / Page 31⁽¹⁰⁾ - Ex 3.1 / Page 85⁽¹¹⁾ - Ex 6.2
Page 122⁽¹²⁾ - Ex 8.1 / Page 127⁽¹³⁾ - Ex 10.2

XX Discrete distribution

Page 12 - Ex 2.1¹⁴ / Page 26 - Ex 3.1¹⁵, Ex 3.2¹⁶

XX Elementary Linear Algebra

Page 34¹⁷ - Ex 2.4.2 / Ex 2.4.3¹⁸ / Page 28¹⁹ - Ex 2.5.1
Page 47²⁰ - Ex 3.1.3 / Ex 3.1.4²¹ / Page 62²² - Ex 3.4.4
Page 73²³ - Ex 4.1.1 / Ex 4.1.2²⁴, Ex 4.2.5²⁵
Page 97²⁶ - Ex 5.1.4, Ex 5.1.10²⁷, Page 103²⁸ - Ex 5.1.12
Ex 5.1.13²⁹
Page 125³⁰ - Ex 6.1.2, Page 126³¹ - Ex 6.1.6
Page 131³² - Ex 6.1.27, Page 132³³ - Ex 6.1.28
Page 135³⁴ - Ex 6.2.3

XX Integration & Differential Equation

Page 19³⁵ - Ex 2, Page 25³⁶ - Ex 3, Page 26³⁷ - Ex 4
Page 30³⁸ - Ex 6, Page 39³⁹ - Ex 12, Page 40⁴⁰ - Ex 13
Page 42⁴¹ - Ex 15, Page 44⁴² - Ex 17
Page 67⁴³ - Ex 1, Page 68⁴⁴ - Ex 2, Page 71⁴⁵ - Ex 4
Page 72⁴⁶ - Ex 5, Page 76⁴⁷ - Ex 8

XX Random variable (i)

Page 20⁴⁸ - Ex 2.1, Page 21⁴⁹ - Ex 2.2, Page 22⁵⁰ - Ex 3.1
Page 22⁵¹ - Ex 3.2

maths 301

2

xx mathematical modelling preliminary

page ⁵²9, page ⁵³12

xx maths 301 Introduction to theory of complex variable

page 87 ⁵⁴ Ex 3.4, page 96 ⁵⁵ Ex 3.8

page 111 ⁵⁶ Ex 1, page 116/117 ⁵⁷ Ex 3

page 123 ⁵⁸ Ex 6

xx maths 302 Elementary Linear Algebra

page 139 ⁵⁹ Ex 6.2.6, page 182 ⁶⁰ Ex 8.3.7

page 186 ⁶¹ Pb 8.4.6, page 194 ⁶² Pb 8.4.24

page 223 ⁶³ Ex 9.2.14, page 255 ⁶⁴ Ex 11.2.3

page 255 ⁶⁵ Ex 11.2.3

xx maths 401 continuous distribution

page 128 ⁶⁶ Ex 10.2, page 133 ⁶⁷ Ex 12.2

page 130 ⁶⁸ Ex 11.1

xx maths 402 Discrete Distribution

page 38 ⁶⁹ Ex 4.5, page 35 ⁷⁰ Ex 4.4

pages 51 ⁷¹ Ex 5.1, page 56 ⁷² Ex 7.1

xx maths 403 Engineering mathematics

xx maths 303 Essential Engineering mathematics

P 32 ⁷³ Ex 2.3.1 | P 35 ⁷⁴ Ex 2.5.1 | P 46 ⁷⁵ Ex 3.2.2

P 55 ⁷⁶ Ex 4.1.2 | P 62 ⁷⁷ Ex 4.5.2 | P 83 ⁷⁸ Ex 5.2.1

P 89 ⁷⁹ Ex 5.4.1 | P 93 ⁸⁰ Ex 5.5.1 | P 94 ⁸¹ Ex 5.5.2

P 99 ⁸² Ex 5.6.3 | P 102 ⁸³ Ex 5.7.1 | P 106 ⁸⁴ Ex 5.8.2

P 112 ⁸⁵ Ex 6.1.1 | P 113 ⁸⁶ Ex 6.3.1 | P 114 ⁸⁷ Ex 6.5.1

P 124 ⁸⁸ Ex 7.1.1 | P 129 ⁸⁹ Ex 7.3.1 | P 142 ⁹⁰ Ex 8.3.1

maths 50.1 Introduction to Probability

Page 17⁹¹ - Ex 3.5, Page 23⁹² - Ex 4.4, Ex 4.5
 Page 36⁹³ - Ex 6.2 Page 42⁹⁴ - Ex 10.1

maths 50.1 Linear Algebra & matrices Row operation

Page 51⁹⁵ - Ex 2.1.6, Page 55⁹⁶ - Ex 2.1.11
 Page 64⁹⁷ - Ex 2.1.27, Page 146⁹⁸ - Ex 4.2.6

maths 50.2 Introductory finite difference method for PDE

P10⁹⁹ - write general form of partial differential equation

P11¹⁰⁰ - write the models for the following classifications of PDEs

(a) Elliptic (b) parabolic (c) Hyperbolic (d) $u_t = -cu_x$
 (e) $u_t + cu_x = u u_{xx}$

Page 12¹⁰¹ - Exercise 1 P12

P17¹⁰² - write the equation for Taylor's Theorem

P18¹⁰³ - $u(x) = x^2$ find the first order forward of FD approximation to $u_x(3)$ using stepsize $h = 0.1$

P42¹⁰⁴ - write the equation for Iterative solution method

P43¹⁰⁵ - define the distance between two vectors x in $\mathbb{R}^N$ by iterative approach ($x = 1, 3, 5$, $y = 4, 5, 3$)

P43¹⁰⁶ - write the equation for Jacobi Iteration &

→ 44

P45¹⁰⁷ - write the equation for Gauss ~~seidel~~ ^{seidel} Iteration

→ 46

P47¹⁰⁸ - write successive over relaxation method

↓
 P49 for with relaxation parameter $0 < \omega < 1$ for under relaxation, for $1 < \omega < 2$ for over relaxation

XX maths 601 Random Variables

$P_{20} - \overset{109}{Ex 1} / P_{21} - \overset{110}{Ex 2.2} / P_{22} - \overset{111}{Ex 3.2} / P_{23} - \overset{112}{Ex 3.4}$
 $P_{32} - \overset{113}{Ex 3.6} / P_{36} - \overset{114}{Ex 4.3} / P_{72} - \overset{115}{Ex 5.2}$

BAE 402 calculus

XX calculus 1a. pdf

$P_{59} - \overset{116}{Ex 4.1} / P_{60} - \overset{117}{Ex 4.2} / P_{65} - \overset{118}{Ex 4.3} / P_{68} - \overset{119}{Ex 4.5}$
 $P_{69} - \overset{120}{Ex 4.7} / P_{73} - \overset{121}{Ex 4.8}$
 $P_{85} - \overset{122}{Ex 5.3}$

XX calculus 2a. pdf

$P_{13} - \overset{123}{Ex 2.1} / P_{22} - \overset{124}{Ex 7.1}$
 $P_{44} - \overset{125}{\text{write down the equations for line integral}}$
 $P_{46} - \overset{126}{\text{describe the surface integral development procedure}}$
 $P_{70} - \overset{127}{\text{describe the Green's theorem in the plane.}}$

XX calculus 2b1. pdf

$P_{7} - \overset{128}{Ex 2.1} / P_{37} - \overset{129}{Ex 3.1} / P_{40} - \overset{130}{Ex 3.2} / P_{42} - \overset{131}{Ex 3.3}$
 $P_{44} - \overset{132}{Ex 3.4} / P_{42} - \overset{133}{Ex 3.6} / P_{51} - \overset{134}{Ex 4.1}$
 $P_{52} - \overset{135}{Ex 4.2} / P_{60} - \overset{136}{Ex 5.1} / P_{69} - \overset{137}{Ex 5.2}$
 $P_{70} - \overset{138}{Ex 5.4}$

XX calculus 3b. pdf

$P_{56} - \overset{139}{\text{write the generalized formulas for}}$
 $(a) \text{ Quotient like series } (b) \text{ Exponential like series}$
 $P_{60} - \overset{140}{\text{describe the condition required for convergence of power series.}}$

$P_{65} - \overset{141}{Ex 5.3}$

$P_{92} - \overset{142}{\text{In the following equations, which one will be possible find the power series solution}}$

(a) $x \frac{d^2 y}{dx^2} + 2 \frac{dy}{dx} + xy = 0$ $x \in \mathbb{R}$ | (b) $x^2 \frac{d^2 y}{dx^2} + (x^2 + \frac{1}{4})y = 0$ $x \in \mathbb{R}$ | (c) $\frac{d^4 y}{dx^4} + (\lambda - x) \frac{d^2 y}{dx^2} - \frac{dy}{dx} = 0$

* calculus 3c-1

Page 6¹⁴³ - Ex 1.1, Page 7¹⁴⁴ - Ex 1.2 | Page 7¹⁴⁵ - Ex 1.3
Page 8¹⁴⁶ - Ex 1.4 | Page 8¹⁴⁷ - Ex 1.5 | Page 9¹⁴⁸ - Ex 1.7
Page 10¹⁴⁹ - Ex 1.8 | Page 11¹⁵⁰ - Ex 1.11

* calculus 4c-1

Page 7¹⁵¹ - Ex 1.2 | Page 8¹⁵² - Ex 1.3 | Page 10¹⁵³ - Ex 1.4 |
Page 12¹⁵⁴ - Ex 1.5 | Page 14¹⁵⁵ - Ex 1.6 |

* maths 304 Integration and Differential Equations

Page 14¹⁵⁶ - Ex 1, Page 19¹⁵⁷ - Ex 2, Page 25¹⁵⁸ - Ex 3
Page 26¹⁵⁹ - Ex 4, Page 27¹⁶⁰ - Ex 2.7, Page 30¹⁶¹ - Ex 6
Page 33¹⁶² - Ex 8, Page 35¹⁶³ - Ex 9,
Page 39¹⁶⁴ - Ex 12, Page 41¹⁶⁵ - Ex 14, Page 42¹⁶⁶ - Ex 15
Page 43¹⁶⁷ - Ex 13, Page 44¹⁶⁸ - Ex 17, Page 45¹⁶⁹ - Ex 18
Page 50¹⁷⁰ - Ex 20, Page 53¹⁷¹ - Ex 24, Page 54¹⁷² - Ex 25
~~Page 66 - Ex~~ Page 67¹⁷³ - Ex 1, Page 68¹⁷⁴ - Ex 2
Page 69¹⁷⁵ - Ex 3, Page 72¹⁷⁶ - Ex 5, Page 76¹⁷⁷ - Ex 8
Page 79¹⁷⁸ - Ex 10

* maths 403 Second order Differential Equations

Page 14¹⁷⁹ - Ex 1, ~~Ex~~ P 19¹⁸⁰ - Ex 3, P 22¹⁸¹ - Ex 4
P 25¹⁸² - Ex 5, P 29¹⁸³ - Ex 6
P 45¹⁸⁴ - Ex 8

P 49¹⁸⁵ find the generalized solution for the following
Equation
SI $(1-x^2)y'' - 2xy' + \lambda y = 0$

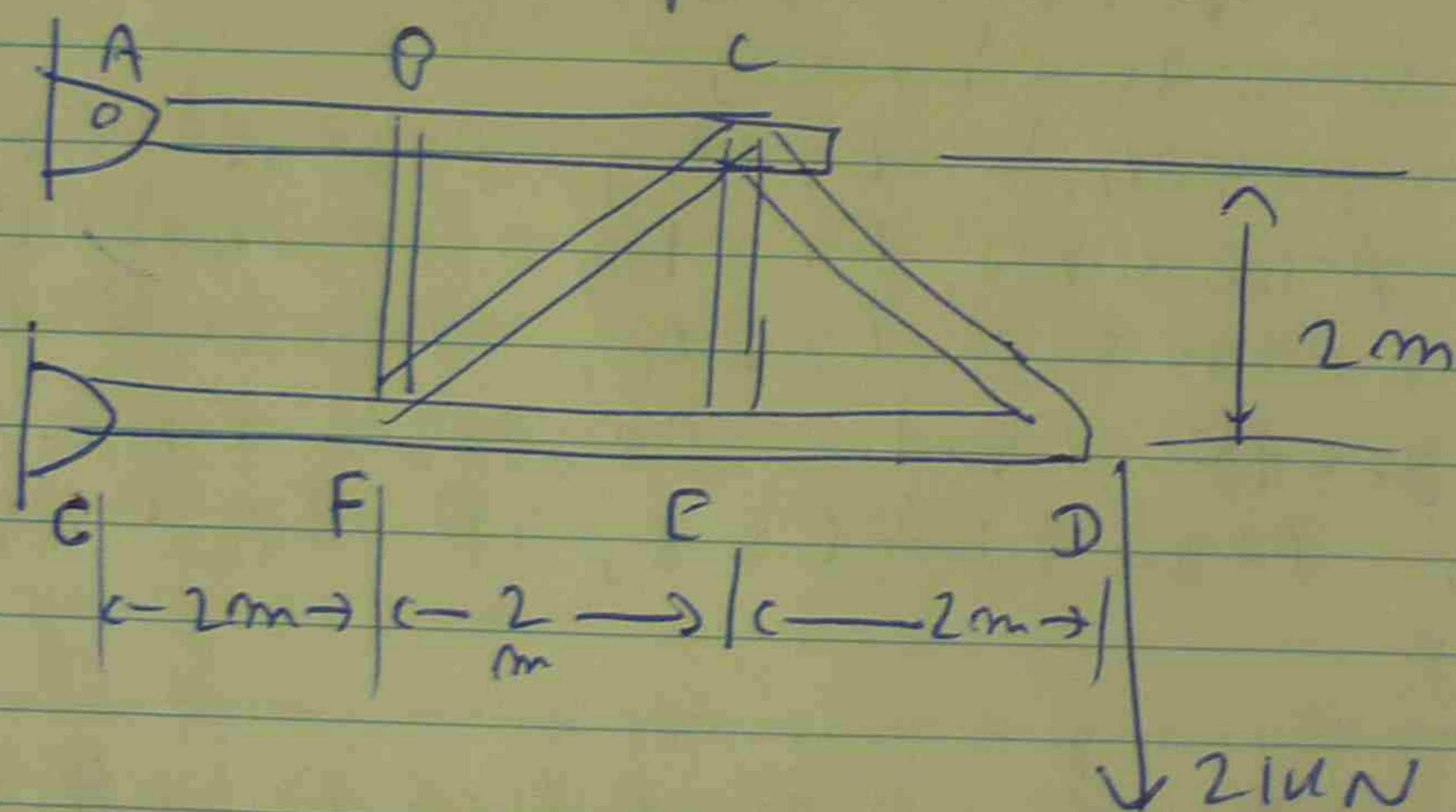
BAE 403 Engineering mechanics

Ch 1. pdf① Agile Ex 1.1 // 1.2 // 1.3

166 A girl whose mass is 40 kg is using a swing set. The diameter of wire used for constructing the links of the chain is 5 mm. Determine the average normal stress in the link at the bottom of the swing.

Ex 1.3

167 All members of the truss shown in figure have a C.S.A of 500 mm^2 . All pins have a diameter of 20 mm. Determine (a) The axial stresses in member BC and CE (b) The shear stress in the pin at A assuming the pin is in double shear.

Ch 1 slide

Define the following (a) normal stress (b) shear stress
Describe (c) stress in pins (d) internally distributed force system (e) stress at a point

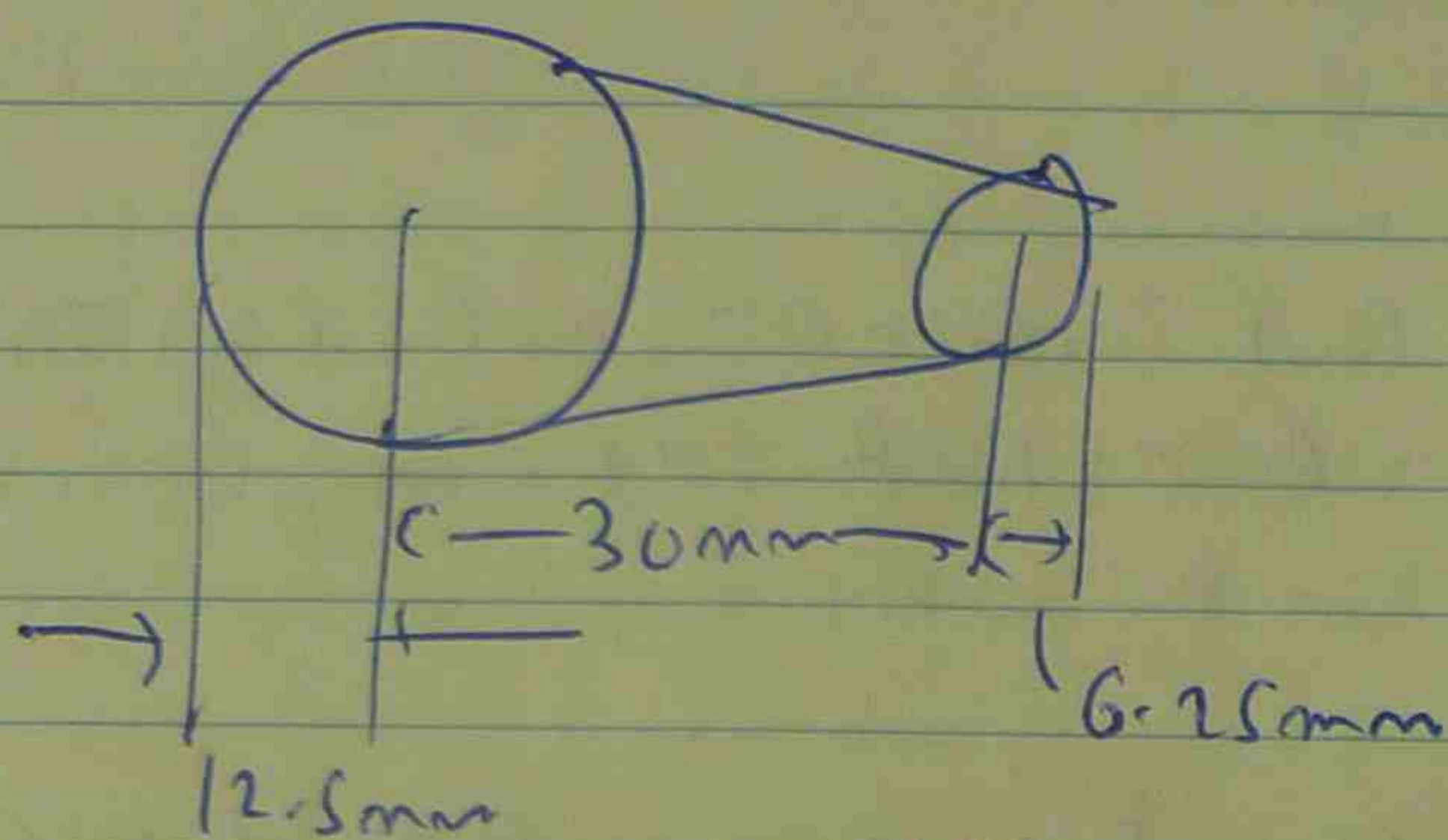
Chap 2. pdf

Ex 2.3 169 A thin ruler 12 in long is deformed into a circular arc with a radius of 30 in. that subtends an angle of 23° at the center. Determine the average normal strain in the ruler.

7

190

Ex 2.4/6 A belt and a pulley in a VCR has the dimensions shown in figure. To ensure adequate but not excessive tension in the belts, the average normal strain in the belt must be minimum 0.019 mm/mm and a maximum of 0.034 mm/mm . What should be the minimum & maximum untensioned length of the belt to nearest $1/10 \text{ of mm}$.



Ex 2.6 | Page 9
Page 26 - Ex 2.9

Ex 2.7 Page 10 | Page 12 - Ex 2.8

Chap 2. Slide.pdf

Explain (a) Average normal strain (b) Average Shear strain (c) Engineering strain

Chap 3.pdf

Ex Page 2 - Explain Tension Test

Page 7 - Ex 3.1 | Page 9 - Ex 3.2 | Page 12 - Ex 3.3 |

Page 17 - Ex 3.6 | Page 34 - Ex 3.8 | Page 41 - Ex 3.9 |

Page 52 - Ex 3.13 | Page 55 - Ex 3.16 |

Chap 3 Slide.pdf

Explain (a) Tension Test (b) Isotropy & Homogeneity (c) Plain stress & Plain strain (d) Failure & factor of safety.

Chap 4.pdf

Page 2 - Ex 4.1

Page 4 - Ex 4.2 | Page 11 - Ex 4.3

Page 28 - Ex 4.9

Page 54 - Ex 4.14

8

Chap 4 slide .pdf

Explain ²¹¹ - axial members, structural analysis

Chaps .pdf

Page 2 - Ex 5.1 / Page 6 - Ex 5.4 / Page 16 - Ex 5.5 /
Page 20 - Ex 5.8 / Page 36 - Ex 5.12 /

Chaps. slide .pdf

²¹⁷
Describe the following: (a) Torsion of Shafts (b) Internal Torque (c) Theory of circular shaft (d) Torque diagram

Chap 6 .pdf

Page 2 - Ex 6.1 / P 15 - Ex 6.5 / P 18 - Ex 6.6
Page 32 - Ex 6.10 / Page 51 - Ex 6.13 / Page 57 - Ex 6.15

Chap 6 slide

²²⁴
Explain (a) Symmetric Bending of Beams (b) Internal Bending moment (c) Shear moment by equilibrium (d) Shear stress in thin symmetric beam

Chap 7 .pdf

Page 3 - Ex 7.1 / Page 4 - Ex 7.2 / Page 8 - Ex 7.4
Page 22 - Ex 7.7 / Page 31 - Ex 7.8 / Ex 42 - Ex 7.13
~~Page~~

Chap 7 - Slides

²³¹
Explain internal movement

Chap 8

²³² Page 3 - Ex 8.1 / ²³³ Page 14 - Ex 8.3 / ²³⁴ Page 23 - Ex 8.6

Chap 8 Slide

²³⁵
Explain (a) Stress Transformation / (b) wedge method (c) stress transformation by method of equation

Chap 9. pdf

Page 2 - Ex 9.1 ²³⁶ Page 8 - Ex 9.2 ²³⁷ Page 30 - Ex 9.4 ²³⁸

Chap 9 - Slide. pdf

Explain (a) Strain Transformation (b) Line method ²³⁹
 (c) visualizing principal Strain Direction
 (d) Strain Gauge

Chap 10. pdf

Page 7 - Ex 10.1 ²⁴⁰ / Page 9 - Ex 10.2 ²⁴¹ / Page 15 - Ex 10.4 ²⁴²
 Page 27 - Ex 10.7 ²⁴³ / Page 29 - Ex 10.8 ²⁴⁴ / Page 39 - Ex 10.9 ²⁴⁵

Chap 10 Slide ²⁴⁶

Ex Explain (a) Non zero Stress (b) Non zero Strain
 (c) Torsion (d) combined Axial & Torsional Loading

Chap 11

Page 10 - Ex 11.1 ²⁴⁷ / Page 14 - Ex 11.4 ²⁴⁸ / Page 26 - Ex 11.5 ²⁴⁹
 Page 27 - Ex 11.6 ²⁵⁰

Chap 11 Slide ²⁵¹

Explain (a) Buckling Approx Phenomenon
 (b) Local Buckling
 (c) Radial Stress (d) Radius of Gyration

ME301 Applied mathematics

Page 19 - Ex 1.1 ²⁵² / Page 26 - Ex 2.1 ²⁵³ / Page 28 - Ex 2.2 ²⁵⁴
~~Ex~~ Page 31 - Ex 2.4 ²⁵⁵ / Page 38 - Ex 3.2 ²⁵⁶ / Page 41 - Ex 3.5 ²⁵⁷
 Page 51 - Ex 4.5 ²⁵⁸ / Page 65 - Ex 6.1 ²⁵⁹ / Page 68 - Ex 6.4 ²⁶⁰
 Page 71 - Ex 6.7 ²⁶¹ / Page 82 - Ex 8.2 ²⁶² / Page 87 - Ex 8.8 ²⁶³
 Page 103 - Ex 10.2 ²⁶⁴

BAE 404 Engineering materials & Thermodynamics

+

BAE 403 Engineering mechanics (mechanical Engineering)

~~XX~~ Heat Transfer. pdf

Page 6

Explain the modes of heat transfer

Page 11²⁶⁵ Ex 1-1, Page 15²⁶⁶ Ex 1-2, Page 31²⁶⁷ Ex 2-1

Page 42²⁶⁸ Ex 2-3, Page 82²⁶⁹ Ex 3-1, Page 94²⁷⁰ Ex 3-2

Page 99²⁷¹ Ex 3-4, Page 112²⁷² Ex 4-1, Page 117²⁷³ Ex 4-2

Page 138²⁷⁴ Ex 5-1, Page 146²⁷⁵ Ex 5-2, Page 149²⁷⁶ Ex 5-3

~~XX~~ Theory of waves in materials

Page 16²⁷⁷ Define the following:

(a) The material continuum (b) notion of body
Page 17²⁷⁸ (c) Representative cube

Page 18²⁷⁹ classify the materials.

Page 21²⁸⁰ Homogeneous material, / composite material
↑ Explain

Page 26²⁸¹ Explain the basic mechanical properties of materials

Page 26²⁸² Define (a) Elasticity (b) Plasticity (c) Thermo-elasticity (d) viscosity (e) Diffusional elasticity
↓
29 (f) Electroelasticity (g) magnetoelasticity

Page 31²⁸³ write the equation for first law of Thermodynamics
Page 35²⁸⁴ Define chemical potential

Page 38²⁸⁵ Explain sand wave,

Page 39²⁸⁶ write the equations for (a) Kirchhoff's formula (b) Poisson formula (c) d'Alembert formula

Page 43²⁸⁷ Explain the characteristics of wave.

Page(50)²⁸⁸ Define phase velocity.
 Page(61)²⁸⁹ write the equation for Linear strain tensor
 Page(63)²⁹⁰ Lagrange Cauchy stress tensor
 Page(65)²⁹¹ write the equation for class equation of mass balance

Page(66)²⁹² write the balance equation of ^{energy} energy for First principle of Thermodynamics
 Page(71)²⁹³ write Christoffel equation for plane waves in Linear Elastic materials.
 Page(85)²⁹⁴ explain the following:
 (a) surface waves (b) Rayleigh Elastic waves.
 Page(86)²⁹⁵ write the equation for phase velocity of surface wave

ME334 Engineering Thermodynamics

Page 23²⁹⁶ - Ex 2-1 / Page 25²⁹⁷ - Ex 2-3 / Page 57²⁹⁸ - Ex 3-1
 Page 59²⁹⁹ - Ex 3-2 / Ex Page 67³⁰⁰ - Ex 3-8 / Page 73³⁰¹ - Ex 3-13
 Page 80³⁰² - Ex 3-18 / Page 83³⁰³ - Ex 3-20 / Page 87³⁰⁴ - Ex 3-24
 Page 89³⁰⁵ - Ex 3-25 / Page 94³⁰⁶ - Ex 3-30 / Page 99³⁰⁷ - Ex 3-34

ME434 Wind Turbines

Page 31³⁰⁸ - Sketch wind farm displacement
 Page 40³⁰⁹ - Describe types of wind turbine,
 Page 63³¹⁰ - Ex 6.1 / Page 67³¹¹ - Ex 6.3 / Page 65³¹² - Ex 6.2
 Page 30³¹³ - describe planning content of wind turbine
 Page 42³¹⁴ - Explain theory of wind turbine,
 Page 46³¹⁵ - Identify the components of wind turbine
 Page 55³¹⁶ - describe velocity & flow measured by Anemometers

ME634 Pneumatics

Page 8³¹⁷ - Define Atmospheric pressure, vacuum pressure

Page 8

312

12

Pb An air receiver with a volume of 0.3 m^3 must be filled with compressed air to a maximum pressure of 900 kPa . Calculate the volume of free air to be pumped by the compressor.

Page 10³¹⁹ Explain the concept of air power transmission.

Page 12³²⁰ Write spring actuated valve, methods of valve actuation.

Page 17³²¹ Explain actuator control.

Page 32³²² An actuator must reciprocate a load in horizontal direction. The ~~load~~ load mass is 1000 kg . The friction coefficient is 0.12 . The acceleration travel distance is 40 mm and the stationary speed after acceleration is 600 mm/s . The system pressure is 600 kPa . Calculate piston diameter.

Page 33³²³ Piston diameter 40 mm , piston rod diameter 16 mm .

Stroke length = 550 mm . Euler case - situation 2
Safety factor = 5 - mounting type = rear end swivel

³²⁴ Find safe operating pressure.

Page 38 A casing built linear actuator has a piston diameter 200 mm & oversized piston rod diameter 120 mm . Air pressure is 1000 kPa . Calculate intensified pressure on rod end and air outlet. If the meter out air outlet of the flow control valve is by mistake almost closed.

Page 46³²⁵ Explain liquid level pneumatic sensor.

BAE 504

Lec 24-4- Explain Integrated circuit fabrication³²⁶

test Lec 7-4 Describe operational Amp terminal voltage & current³²⁷

Lec 13-4³²⁸ Explain semiconductor materials.

Lec 3-4 Explain formulation of Kirchhoff's Law³²⁹

BAE 405 Advanced circuit Analysis

+ EE301 Electrical circuit 1

EE301 concepts in Electrical circuit

page 36³³⁰ - Example / page 41³³¹ - Example / page 43³³² - Example
 page 45³³³ - Example / page 49³³⁴ - Example
 page 62³³⁵ - Example / page 65³³⁶ - Example / page 75³³⁷ - Example

EE303 Engineering circuit Analysis

page 24³³⁹ - Ex 2-3, / page 52³³⁹ - Ex 3-2 / page 54³⁴⁰ - Ex 3-10
 page 66³⁴¹ - Ex 4-3 / page 142³⁴² - Ex 5-9
 page 172³⁴³ - Ex 6-1, / page 230³⁴⁴ - Ex 7-6 / page 274³⁴⁵ - Ex 8-3
 page 330³⁴⁶ - Ex 9-3, / page 342³⁴⁷ - Ex 9-6
 page 382³⁴⁸ - Ex 10-2, / page 390³⁴⁹ - Ex 10-6 / page 396³⁵⁰ - Ex 10-9
 page 422³⁵⁰ - Ex 11-3, / page 440³⁵¹ - Ex 11-2
 page 466³⁵² - Ex 12-2, / page 471³⁵³ - Ex 12-5
 page 500³⁵⁴ - Ex 13-3 / page 502³⁵⁵ - Ex 13-5
 page 554³⁵⁶ - Ex 14-1, / page 546³⁵⁷ - Ex 14-3 / page 550³⁵⁸ - Ex 14-6
 page 576³⁵⁹ - Ex 15-2 / page 580³⁶⁰ - Ex 15-3
 page 620³⁶¹ - Ex 16-1 / page 635³⁶² - Ex 16-3
 page 690³⁶³ - Ex 17-2, / page 694³⁶⁴ - Ex 17-4 /
 page 732³⁶⁵ - Ex 18-1, / page 742³⁶⁶ - Ex 18-2
 page 754³⁶⁷ - Ex 18-4

BAE504 Lec 5-4³⁶⁸

- describe nodal Analysis

Lec 16-4 - sketch most FET I_D vs V_{GS} characteristic

Lec 23-4³⁶⁹ - Explain how to measure inverter performance

Lec 12-4³⁷¹ write equation for NOT / NOR / NOR / NAND

~~EE404~~ Electrical measurement

- Page 9³⁷¹ write the methods to measure inductance & capacitance
 Page 3³⁷² write the method to measure magnetism
 Page 4³⁷³ Explain high voltage measurement & testing
 Page 1³⁷⁴ Explain how to locate cable fault
 Page 7³⁷⁵ Explain the measurement of electrical power
 Page 7³⁷⁶ Explain the measurement of electric energy

BAE 406 Electro Mechanics

- Ch02 - Prb - emb - Pb 2-1, 2-5, 2-7 (Page 2/4/5) Pb 3³⁸³
 Ch02 - Prb - emb - Pb 3.1 (Page 2) Pb 3.2 (Page 3) Page 3.2
 Pb 3.10 - (Page 7), Pb 3.12 (Page 8) (Page 6)
 Chap 03 - Prb - emb - Pb 3.2 (Page 3), Pb 3.6 (Page 5)
 Pb 3.8 (Page 6) Pb 3.10 (Page 7), Pb 3.16 (Page 11)
 Chap 04 - Prb - emb - Pb 4.4 (Page 4), Pb 4.16 (Page 8) Pb 4.20 (Page 10)
 Pb 4.27 (Page 13)
 Chap 05 - Prb - emb - Pb 5.1 (Page 2), Pb 5.2 (Page 3), Pb 5.9 (Page 7)
 Pb 5.12 (Page 9) Pb 5.15 (Page 12) Pb 5.27 (Page 16)

EE502 Electrical machines

- Theory - Page 71 - Ex 6.1, Page 72 - Ex 6.2
 Page 96 - Ex 8.11
 Page 120 - Ex 10.11
 Page 243 - Ex 20.6,
 Page 263 - Ex 21.7
 Page 335 - Explain the followings
 (a) Turbine (b) condenser (c) Boiler feed pump

- Problem - Page 43 - Ex 4.1
 Page 52 - Ex 5.1, Page 59 - Ex 5.2 Page 61 Ex 5.3

- Page 120⁴¹² - EX 10-11
 Page 131⁴¹³ - EX 12-1, Page 133⁴¹⁴ - EX 12-2, Page 134⁴¹⁵ - EX 12-3
 Page 136⁴¹⁶ - EX 12-4
 Page 142⁴¹⁷ - Explain the operation of 3φ induction motor
 Page 147⁴¹⁸ - EX 13-2 / Page 147⁴¹⁹ - EX 13-3
 Page 177⁴²⁰ - Explain the operation of synchronous generator
 Page 184⁴²¹ - EX 16-2, Page 185⁴²² - EX 16-3, EX 16-4
 Page 186⁴²³ - EX 16-5, Page 189⁴²⁴ - EX 16-7
 Page 190⁴²⁵ - EX 16-8
 Page 230⁴²⁶ - Explain the following:
 (a) control relay (b) Thermal relay
 Page 231⁴²⁷ - EX 20-1 | Page 232⁴²⁸ - EX 20-3
 EX 20-2⁴²⁹
 Page 239⁴³⁰ - EX 20-4

ME 301 machine principle

- ①⁴³¹ Explain rotating machinery pdf 114
- ②⁴³² Explain machinery mounting pdf 116
- ③⁴³³ Explain machine balancing pdf 119
- ④⁴³⁴ Describe bearings, pdf 124
- ⑤ sketch power transmission & explain pdf 139
- ⑥⁴³⁵

B A E 407 Advanced Electro magnetic field & materials

- 436
 em 01 - pdf - Explain electric field
 em 06 - pdf - Explain magnetic effect on electric current
 em 10 - pdf - Explain electro magnetic induction
 em 17 - pdf - Explain magnetic dipole movement
- 440
 Lecture 3 - pdf - Explain electro static energy
 441
 Lecture 8 - pdf - Explain multiple expansion
 442
 Lecture 12 - pdf - Explain magneto statics
 443
 Lecture 14 - pdf - Write maxwell's equations & explain
 444
 Lecture 20 - pdf - Explain electro magnetic relation & scattering
 445
 Lecture 28 - pdf - Explain electromagnetic field & moving charges

Formulae 446

- CW 960329-1 - pdf write equation for amp law
 447
 CW 960219-2 + pdf - write gauss's law

EE 407 Electro-magnetism for electronic engineers

- 448
 page 9 - Ex 1-1, page 16 - Ex 1-6, page 25 - Ex 1-10
 449
 page 38 - Ex 2-2 / Ex 2-3, page 46 - Ex 2-9, page 57 - Ex 2-15
 450
 page 133 - Ex 7-1, page 138 - Ex 7-3, page 143 - Ex 7-6
 451
 page 152 - Ex 8-2, page 156 - Ex 8-5,
 452
 453
 454
 455
 456

BAE 402 - Analogue & Digital Electronics

XX Introduction to Electronic Engineering

Page 19 - Explain the following:

- 459 (a) Intrinsic semiconductors (b) Recombination
21 (c) Doping (d)

460 Explain

Page 26

Page 25 - (a) Forward biasing (b) Reverse biasing

Page 33 - 461 Explain (a) opto electronics (b) Tunnel Diode

Page 38 - 462 sketch CE / CC / CB connections of transistors

Page 51 - 463 Explain (a) Depletion mode MOSFET

Page 53 - Explain Enhancement mode MOSFET

Page 59 - 60 - 464 Explain structure & output characteristics of Thyristor

Page 131

Page 130 - 465 Explain (a) OR Gate (b) NOR Gate

Page 132 - AND Gate

Page 135 - 466 Explain Encoder / decoder

Page 133 - 467 Explain sequential logic

EE403 Introduction to Power Electronics

Page 20 - 468 Explain 3 ϕ Rectifier | Page 22 - 469 Dual Rectifier

Page 23 - 469 Active rectifiers

Page 35 - 471 Multi level inverters

Page 67 - 473 Explain boost converter

Page 71 - 474 Explain Phase modulation with sketch

Page 89 - 475 Explain block modulation

Page 101 - 476 Explain Pulse width modulation

EE403 Introduction to Electronic Engineering

Page 62 - 477 Explain linear & non linear devices

Page 74 - 478 Explain feedback, Page 77 - 479 sketch DC/AC load line

Page 80 - 480 Explain CE voltage Amplifier

Page 88 - 481 describe the properties of operational Amplifiers

- ⁴⁸² Page 94 - Explain describe inverting feed back voltage amplifier
⁴⁸³ Page 101 - describe filter | ⁴⁸⁴ Page 105 - Explain passive band stop filter with sketch
⁴⁸⁵ Page 111 - Explain differentiator | ⁴⁸⁶ Page 115 - Explain comparator
⁴⁸⁷ Page 120 - Explain sine wave generator with sketch
⁴⁸⁸ Page 126 - Explain Quantizing encoding

EE524 Introducing to power Electronics

- ⁴⁸⁹ Page 76 - sketch the block diagram of an ordinary gate driver
⁴⁹⁰ Page 84 - Explain gating of dual rectifier
⁴⁹¹ 87 - gating of a cycloconverter
⁴⁹² Page 100 - Explain pulse width modulation
⁴⁹³ Page 111 - Explain space vector modulation

EE405 Digital system

XX EE405 - digital system design

- ⁴⁹⁴ Page 13 - convert 26 to binary
⁴⁹⁵ Page 15 - convert 100 101 110 to octal
⁴⁹⁶ Page 16 - What are Hex / binary & character value, of 69, 73, 116
⁴⁹⁷ Page 17 - convert 973 to BCD
⁴⁹⁸ Page 18 - What are the Gray code values, of decimal 4, 9, 15
⁴⁹⁹ Page 31 - sketch the gates to get the function $F = \overline{A} + \overline{B}$
⁵⁰⁰ Page 33 - $F = AB(B+C)$
⁵⁰¹ Page 53 - simplify $F = A\overline{B} + AB$ by using Karnaugh map

19

Page 64 ^{S02} ~~Simplify~~ Simplify

$$LQ = \bar{P}R + \bar{P}Q\bar{S} + P\bar{Q}\bar{R} + \bar{P}\bar{Q}\bar{S}$$

 by using Karnaugh map

- Page 69 ^{S03} - Explain SR Flip Flop with Enable Input
 Page 74 ^{S04} - Explain Asynchronous Flip Flop
 Page 79 ^{S05} - Sketch 2 - Flip Flop & Explain the operation
 Page 85 ^{S06} - Explain the operation of Astable multivibrator
 Page 89 ^{S07} - Sketch the truth table for Full Adder
 Page 92 ^{S08} - Sketch the circuit diagram & Explain the operation of Parallel Adder
 Page 111 ^{S09} - Explain the operation of De-multiplexer
 Page 115 ^{S10} - Explain Asynchronous up counter - CAT clocked with Flip Flops
 Page 121 ^{S11} - Explain Synchronous counters

EE 526 Digital Signal Processing

- Page 12 ^{S12} - Explain non linear shift invariant system
 Linear shift invariant system
 Page 13 ^{S13} - Ex 1.2.4
 Page 17 ^{S14} - Ex 2.1.3
 Page 31 ^{S15} - Ex 3.4.2, Page 25 ^{S16} - Ex 2.5.3
 Page 40 ^{S17} - Ex 5.3.2,

EE 527 Digital Image Processing (Part 1)

- Page 11 ^{S18} - Explain the application areas that use digital image processing
 Page 15 ^{S19} - What are the components of an image processing system | Page 17 - Explain basic concepts in image sampling & quantization
 Page 21 ^{S20} - Explain Gamma Transform | Page 22 Histogram Processing
 Page 27 ^{S21} - Explain smoothing linear filters | Page 30 order static filter
 Page 40 - write Fourier transform of sampled functions
 Page 43 ^{S22} - one dimensional DFT | Explain Gaussian low pass filter P 50
 Page 51 - Butterworth HP Filter

BAE 501 Advanced Power system & power Transmission Network

(3pt)

Questions BAE 501 folder Test Advanced Power system - power Trans Network 4
Principle of Power System V. M. M. H. T.

- S25 Page 3 - out line the source of energy
 S26 Page 10-12 - Explain the operation of steam power station
 S27 Page 14-27 - Explain the operation of hydropower station
 S28 Page 28-30 - Explain the operation of diesel power station
 S29 Page 31-33 - Explain the operation of nuclear power station
 S30 Page 35-40 - Explain the operation of gas turbine power station

S31 Page 41-52 - How variable load can affect the power station operation?

S32 Page 63-67

Page 64 - Ex 3.20 | Ex 3.21 | Page 65 - Ex 3.22
 Page 66-74 - Ex 4.1 | Ex 4.2 | Ex 4.3 | Ex 4.4 | Ex 4.5
 S25 S26 S27 S28 S29
 Page 91 - Ex 5.1 | Ex 5.2 | Ex 5.3 | Ex 5.4
 S30 S31 S32 S33
 Page 109 - Ex 6.2 | Ex 6.3 | Ex 6.4
 S34 S35 S36

Page 137 - compare the copper weight of 1 & 3 wire system

Page 171 - Ex 8.1, Page 172 - Ex 8.2 Ex 8.3
 S37 S38 S39 S40

Page 190 - Ex 9.1, Ex 9.2
 S41 S42

Page 214 - Ex 9.1, Ex 9.2
 S43 S44

Page 233 - Ex 10.1 | Page 235 - Ex 10.2 Ex 10.3
 S45 S46 S47

Page 258 - Ex 10.16, Page 260 - Ex 10.18
 S48 S49

Page 262 - Explain screened cable, Page 269 -
 S50 S51

Explain Limitation of solid cable

Page 289 - Ex 11.17, Page 290 - Ex 11.18, Ex 11.19
 S52 S53 S54

Page 308 - what are the requirements of distribution system?
 S55

Page 313 - Ex 13.1, Page 343 - Ex 13.22, Page 359 - Ex 14.1
 S56 S57 S58

Page 360 - Ex 14.3, Page 375 - what are the methods of voltage control?
 S59 S60

Page 382 - what are the essential features of switching gear?
 S61

Page 401 - Explain the operation principle of CB
 S62

- Page 489^{S63} - What are the desirable characteristics of fuse element?
- Page 492^{S64} - What are the fundamental requirements of protective relay?
- Page 524^{S65} - Explain the differential protection of alternators.
- Page 570^{S66} - Classify the substations.

Inter Power quality. 21P

- Page 15^{S67} - What are the consequences of power power quality?
- Page 64^{S68} - What are the problems in public lighting networks related to power quality?
- Page 45^{S69} - Explain describe power quality & harmonic distortion.
- Page 115^{S70} - Explain (a) power quality indexes (b)
- Page 118^{S71} - Describe voltage quality levels.
- Page 129 & 143^{S72} - Explain the procedures to control the power quality.
- Page 174^{S73} - Describe power quality & harmonic emission standards.
- Page 176^{S74} - Sketch active filter, & explain.

Inter power quality in Electrical generation & distribution system power quality disturbances

- Page 19^{S75} - What are the requirements on voltage waveform in Hybrid renewable generation units in stand alone mode.
- Page 49^{S76} - Write the equations for standard optimal Power Flow formulation.
- Page 53^{S77} - Write the equations for wind energy.
- Page 155^{S78} - Describe voltage sag statistical indices.
- Page 222^{S79} - Explain basic principles of power flow control.

BAE S01 Advanced power system in Power
Transmission network (power Transmission
Line 1)

~~Explain~~ Describe IP Rating, RL switching, sequence
S80 network

BAE S01 Advanced power system in power
Transmission Network (power Transmission
Line 2)

Explain Dry type transformer
in Power Transmission Arc fault

EE S12 Electrical Power Generation system (1pt)

Page 20 - Explain the turbine design for high
S81 temperature & pressure

Page 36 - Describe turbine components
S82

Page 53 - Explain the burning of fuels
S83

Page 59 - But Explain the burning of gas & oil
S84

Page 112 - Describe the methods to treat the water
S85

Page 140 - Explain heat exchanger
S86

Page 179 - Describe power system computer control
S87 method.

EE S12 power system

Page 35 - Explain typical power system
S88

Page 94 - Ex 4.1, Page 96 - Ex 4.2
S89

Page 113 - Ex 5.3
S91

Page 146 - Ex 7.1, Ex 7.2
S92

Page 172 - Ex 8.1, Ex 113 - Ex 8.2
S94 S95

Page 204 - Ex 10.1
S96

Page 238 - Ex 11.1
S97

EE302 Electrical power

(1pt)

Power system Technology EE402 Electrical power

Page 143 ⁵⁹⁶ Explain surge diverters, Page 144 ⁵⁹⁹ HT LG cable

Page 145 ⁶⁰⁰ Explain power system earth connection

Page 147 ⁶⁰¹ Explain switch gear

Page 164 ⁶⁰² Explain

(a) HRC Fuse

(b) circulating current protection.

Page 197 ⁶⁰³ Explain symmetrical components.

Page 205 ⁶⁰⁴ Explain de commission of electrical plant.

EE302 power system Technology

(1pt)

Page 9 ⁶⁰⁵ Explain types of electrical circuits

Page 15 ⁶⁰⁶ Describe overview of electrical power plant.

Page 74 ⁶⁰⁷ Describe power control using switches

Page 90 ⁶⁰⁸ Describe characteristics of electrical load.

Page 120 ⁶⁰⁹ Explain the operation of electrical energy meter

EE513 - Power Transmission & Practical Power Distribution

(1pt)

Page 60 ⁶¹⁰ Ex 4.1, Page 69 ⁶¹¹ Ex 5.3, Page 77 ⁶¹² Ex 6.1

Page 20 ⁶¹³ Ex 6.3 Page 70 ⁶¹⁴ Ex 5.4

241

BAE S02 Linear System (1 Pt)

BAE S02 Linear system + BAE S03 control system 1

Test

corom hood.pdf

- Ch 1 - ⁶¹⁵ page (3+4) Define controllability
⁶¹⁶ page 5 (Ex 1-2), ⁶¹⁷ page 8 (Ex 1-14)
⁶¹⁸ page 11 - sketch control system Execution Level
⁶¹⁹ page 15 - sketch control system Level
⁶²⁰ page 17 - what are the design guidelines for autonomous controllers

Ch 2 - control 02 - Ch 2

- ⁶²¹ page 1 - what is control? ⁶²² page 2 - sketch the components of modern control system

BAE S02 Linear system + BAE S03 control system 2

Test control system.pdf

Introduction to control system

- ⁶²² page 13 - Explain Additivity, ⁶²³ page 14 - Homogeneity, ⁶²⁴ page 15 Linearity

⁶²⁵ page 19 - Analog - Define analog, ⁶²⁶ page 20 - Define digital

⁶²⁷ page 21 - Explain continuous & discrete system matrices

⁶²⁸ page 24 - Explain Steady state, target value
Rise time % overshoot

System modelling ⁶²⁹ page 29

Explain control process

⁶³⁰ page 30

Draw table of representations

Classical control

⁶³¹ page 33 - what are the system that can be applied with Laplace Transform?

⁶³² page 44 - write the equations for Impulse Response
Impulse function

sampled Sampled data system

⁶³³ page 50 - write the equation for Star transform

System delay

Page 60/61 - write the equations for Time shift /
 634 delay margin page 62 - delayed step
 Transient

Poles & zeros

Page 65 635
 Ph for $h(s) = \frac{(s) + 2}{(s) + 0.25}$ Find zeros.

Page 66 636 What are the effects of poles & zeros?

modern control

Page 69 - Explain time domain approach.

637 Explain state space.

p what are the requirements to meet state space method?

Linear system solution

Page 78/79 solve for $x(t)$ with zero input
 638 solve for $x(t)$ with non zero input

EE304 Introduction to maths for computer (1pt)

Page 18 639 Exercise 1 / 4

Page 22 640 write statements for conjunction, disjunction

↳ 23 conditional

Page 36 641 Example, Page 37 642 Example.

↳ Page 42 643 Find answer $\{1, 2, 3, 4\} \cap \{3, 4, 5, 6\}$

— 43 — $\{Blue, green\} \cup \{Red, green\}$

— 45 — If $A = \{1, 2, 3, 4, 5, 6\}$ & $B = \{1, 2, 3, 4, 5, 6\}$

Find $A \times B$

Page 49 644 Example

— 52 645 Find $\begin{pmatrix} 1 & 9 \\ 5 & \end{pmatrix}$

Page 53 646 Expand $(2+x)^5$

Page 61 → 63 - Examples.

647

BAE SO3 control system

(4 pt)

BAE SO2 Linear system + BAE SO3 control system 2

* System Representation 646Page 102 → 103 - System (1)

$$\dot{x}_f = A_f x_f + B_f u$$

$$y_f = C_f x_f + D_f u$$

System (2)

650

$$\dot{x}_a = A_a x_a + B_a y_f$$

$$y_a = C_a x_a + D_a y_f$$

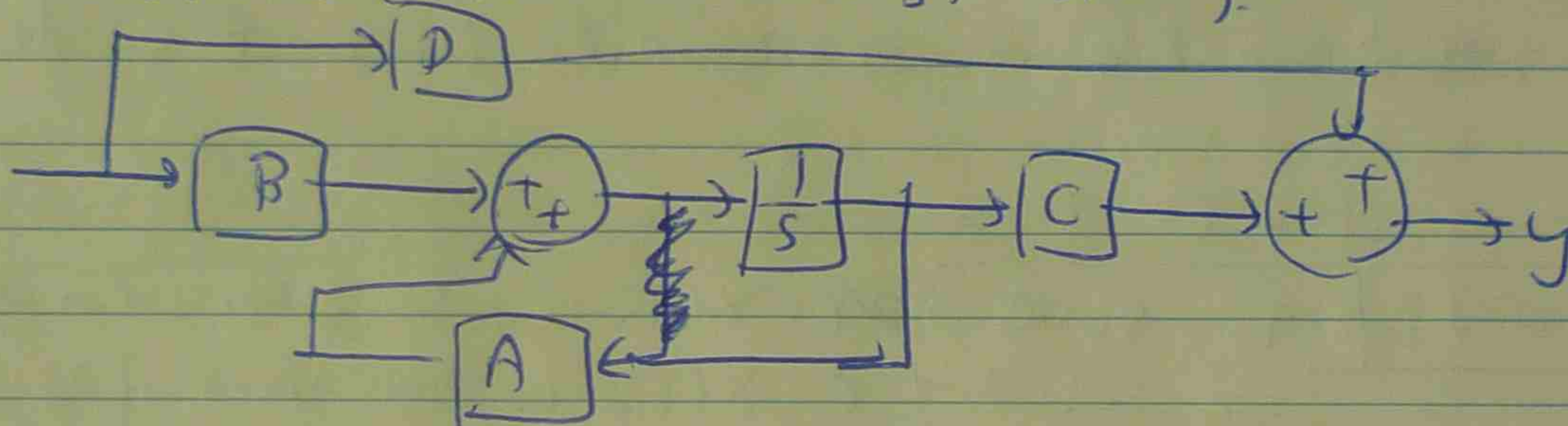
write series state equation & series output equation.

Page 100 - define conditional stability.

651

Page 106 -

652



write state space equation for above flow diagram.

653

Page 111 - signal flow diagram

654 Page 112 - write equation for Mason's Rule.

655 Page 113 - Describe Bode Plot

656 Page 115 - write the equations for Bode Gain

657 Page 117 - Draw the Bode Plot for integrator system

658 Page 118 - Draw the Bode Plot for differentiator system

Stability

Page 123 - How to determine BIBO Stability.

659

$$h(t) = \frac{2}{t} \text{ is stable (or) not}$$

Page 126 - 660

Explain Routh Hurwitz criteria.

Page 134 - 661

Explain Root Locus method.

137 - 662

Express Root Locus Rules.

138 - 663

write Root Locus Equations

139 - 664

describe Root Locus stability.

Page 140 - 665

Ex1 | Ex2

141 - 666

Ex

667

Nyquist Criterion

Page 145 - what is Nyquist stability criteria?

Page 146 Example First order system

147

2nd

controllers & compensators

Page 154 - what is observability ⁶⁰⁶

Page 157 - write equations for proportional controllers, derivative controllers. ⁶⁰⁹

Page 158 - Integral controllers / PID controllers. ⁶⁷⁰

compensators

Page 161 Describe phase compensation, Phase Lead, Phase Lag ⁶⁷¹
phase lead / Lag.

EE 601 Non Linear control Applications (1 Pt)

Application of Non Linear control

Page 12 ⁶⁷² sketch & filtered VSC

13 ⁶⁷³ write mathematical models of VSC

17 ⁶⁷⁴ Explain the application of an input/output feedback linearization to the VSC

32 ⁶⁷⁵ sketch two stage power factor correction converter & non linear average model.

EE 601 control Engineering (1 Pt)

Page 31 ⁶⁷⁶ write the equations for single pole Transfer function.

32 ⁶⁷⁷ Two complex poles transfer function.

43 ⁶⁷⁸ write transfer function of integrator.

44 ⁶⁷⁹ $G(s) = \frac{4}{(s+2)(s^2+s+1)}$

47 ⁶⁸⁰ sketch Explain nichols plot ^{sketch Bode diagram}

61 ⁶⁸¹ Explain Root Locus method.

65 ⁶⁸² Explain Gain & phase margin

$$G(s) = \frac{3}{(s)(s+1)(s+2)}$$

70 ⁶⁸³ write ~~as phase~~ phase lead design

71 ⁶⁸⁴ write phase lag design

EEG01 Feedback control system

(1pt)

Page 12 - Ex 1.5.1 ⁶⁸⁵ Page 15 - Ex 1.7.1 ⁶⁸⁶ Page 16 - 1.7.3 ⁶⁸⁷
 Page 17 - 1.8.3, 1.8.4 ⁶⁸⁸ Page 24 - Ex 2.2.1, 2.2.2 ⁶⁹⁰ Page 25 - Ex 2.2.4 ⁶⁹¹
 Page 27 - Ex 2.3.2 ⁶⁹³ Page 28 - Ex 2.4.2 ⁶⁹⁴ Page 29 - Ex 2.4.4 ⁶⁹⁵
 Page 30 - Ex 2.5.2 ⁶⁹⁶
 Page 41 - Ex 3.2.1 ⁶⁹⁷ Page 42 - Ex 3.3.1, 3.3.4 ⁶⁹⁸ Page 44 - Ex 3.3.4 ⁶⁹⁹
 Page 50 - Ex 3.7.3 ⁷⁰⁰ Page 51 - Ex 3.7.1 ⁷⁰¹ Page 52 - Ex 4.3.2 ⁷⁰³
 Page 56 - Ex 4.2.5 ⁷⁰² Page 57 - Ex 5.3.3 ⁷⁰⁵
 Page 71 - Ex 5.3.1 ⁷⁰⁴

EEG01 PID control

(1pt)

Page 92 - Sketch the block diagram of PID controller ⁷⁰⁵
 — 94 - Sketch the structure of fuzzy PID compensated controller ⁷⁰⁶
 — 99 - write the criteria of the design of 1-PID controller ⁷⁰⁷
 — 100 - Sketch the simulation model of C-PID controlled SFC system ⁷⁰⁸

EEG01 An introduction to non linearity in control system~~(1pt)~~

Page 12 - Define non linearity ⁷⁰⁹ | Explain the forms of non linearity
 Page 14 - Explain the basic principle of phase plane method ⁷¹⁰ Page 20 - The linear case ⁷¹¹
 Page 27 - Ex 1 ⁷¹² Page 28 - Ex 2 ⁷¹³ Page 34 - Ex 3 ⁷¹⁴

EEG 24 Process control

(1pt)

Page 33 - Ex 2.1 ⁷¹⁵ Page 36 - Ex ⁷¹⁶ Page 43 - Ex 2.13 ⁷¹⁷
 Page 51 - Ex 2.19 ⁷¹⁸ Page 58 - Ex 2.25 ⁷¹⁹ Page 65 - Ex 3.5 ⁷²¹ Page 69 - Ex 3.8 ⁷²²
 Page 63 - Ex 3.2 ⁷²⁰ Page 72 - Ex 7.2 ⁷²⁴
 Page 73 - Ex 3.15 ⁷²³ Page 172 - Ex 7.4 ⁷²⁶
 Page 176 - Ex 7.3 ⁷²⁵ Page 178 - Ex 8.3 ⁷²⁷
 Page 197 - Ex 8.2 ⁷²⁸ Page 219 - Ex 9.3 ⁷³⁰ Page 221 - Ex 9.5 ⁷³¹
 Page 217 - Ex 9.2 ⁷²⁹

Page 231 - ⁷³² Ex 9-10,

Page 232 - ⁷³³ Ex 10-1,

Page 242 - ⁷³⁵ Ex 10-6

Page 256 - ⁷³⁸ Ex 11-2,

Page 259 - ⁷³⁹ Explain supervisory control

Page 280 - ⁷³⁹ Ex 12-1, Page 283 - ⁷⁴⁰ Ex 12-2

Page 286 - ⁷⁴¹ Ex 12-3

Page 289 - ⁷⁴² Ex 12-5

Page 291 - ⁷⁴³ Ex 12-6

⁷³⁸ Page 268
Ex 11-8

ME534 Numerical control part 2

(1 At)

Page 15 - ⁷⁴⁴ Explain the applications of numerical control in industry

Page 19 - ⁷⁴⁵ Describe loop system & servo mechanism

Page 58 - ⁷⁴⁶ Figs 2, For the diagram, determine the co-ordinates necessary to drill the part.

Page 66 - ⁷⁴⁷ Explain the following programs
Fig 6.3 | Fig 6.4

Page 85/80 | ⁷⁴⁸ Fig 7.3 | ⁷⁴⁹ Fig 7.4 - Explain the programs

Page 103 - Review Question 1 → 4

⁷⁵⁰

BAE 504 Power system Analysis

1 Pt

Lecture 1 Pages - write equations for average active (real) power / Apparent Power
759

Page 16 - write equation for complex power flow
752

Lecture 2 - pdf

Page 12 - write the formula for Flux linkage self & mutual inductance
753

Page 11 - write the equation for inductance of 3 phase line
754

Lecture 3 - pdf

Page 2 - write equation for the Bus Admittance matrix
755

Page 4 - write matrix formulation equations for given circuit.
756

Lecture 4 - pdf

Page 3 - Explain the processes of Gauss Seidel method
757

Lecture 5 - pdf

Page 4 - Explain the processes of Newton Raphson method.
758

Page 12 - write Jacobian matrix
759

Lecture 6 - pdf

Page 1 - Ex
760

Page 20 - Ex
761

Lecture 7 - pdf

Page 4 - Ex
762

Lecture 8 - pdf

Page 3 - Ex
763

Lecture 10

Pages - Ex
764

Lecture 11

Page 4 - Ex
765

Lecture 12 - pdf

Page 8 - Ex
766

Lecture

Page 13 - Page 17 - Ex
767

Lecture 14 - Page 16 - Ex
768

Lecture 16

769

page 9 - Ex

Lecture 17

770

write equation for solidly grounded generator

Lecture 18

771

page 4 - write equation for double L-G Fault

Lecture 19

772

page 4 - write equation for generator dynamic model

Lecture 20

773

page 2 - write swing equation & small disturbance modelling

Lecture 21

774

page 3 - write equation for equal area criterion method

Lecture 22

775

page 3 - write Euler's method formula

Lecture 23

776

Explain the modelling steps of multi machine system

Power system Load flow13. mkt

777

Classify buses

10. mkt

778

Explain solution of Newton Raphson method

12. mkt

779

write Load flow Algorithm

19. mkt

780

Form Y bus matrix

20 mkt

781

Explain steps in Gauss-Seidel load flow

EE614 Power System Analysis

(1 pt)

BAE 504 Power System Analysis

782 Textbook 10.1.1.64.9435.pdf

- Page 8 - draw Transmission Line circuit model & write the equations. 783
- Page 12 - sketch simple example of power flow & write the equations. 784
- Page 18 - write the equation for Gauss Seidel iteration. 785
- Page 23 - describe dc power flow algorithm. 786
- Page 25 - 26 - model electric generators. 787
- Page 30 - 31 - develop the models of pre-fault on power system & fault on power system. 788

modelling - h508 - script 02(01)

- Page 32 - Ex 3.1, Page 33 - Ex 3.2, Page 34 - Ex 3.3. 789
- Page 42 - Ex 5.1, Page 44 - Ex 5.2, 790
- Page 56 - Ex 6.1, Page 63 - Ex 6.2, 791
- Page 74 - Ex 7.1, Page 96 - describe power system stability. 792

BAE 505 Power System Optimization

(1 pt)

optimization

- optimization 3.mht - describe the economic operation of power system. 793
- optimization 4.mht - Explain economic distribution of loads between the units of a plant. 794
- optimization 8.mht - describe load frequency control. 800
- 7.mht - describe automatic generation control. 801

EEGI 3 power system optimization

1 pt

power system optimization 1.pdf

Page 37 ⁸⁰² Ex 2-1, Page 43 ⁸⁰³ Ex 2-2,
 Page 54 ⁸⁰⁴ Ex 2-3
 Page 108 ⁸⁰⁵ Ex 4-1, Page 112 ⁸⁰⁶ Ex 4-2,
 Page 113 ⁸⁰⁷ Ex 4-3, Page 115 ⁸⁰⁸ Ex 4-4
 Page 118 ⁸⁰⁹ Ex 4-5, Ex 4-6 ⁸¹⁰

Page 220 ⁸¹¹ Ex 5-2, Page 218 ⁸¹² Ex 5-1

BAE 506 Power system stability & protection

2 pt

BAE 506 power system stability & protection - power system stability

- Short circuit 6.mht ⁸¹³ - Describe the faults in ac circuit
 8.mht ⁸¹⁴ - Describe symmetrical faults in power system
 9.mht ⁸¹⁵ - Write the equations related to transient in AC circuit
 9.mht ⁸¹⁶ - Describe the calculation process to determine the fault current using Z bus matrix
 11.mht ⁸¹⁷ - Explain the process to represent the fault current by using symmetrical components.

- Short circuit 6.mht ⁸¹⁸ - Write the equation for AC source transient
 8.mht ⁸¹⁹ - Write the equation for AC source transient current
 3.mht ⁸²⁰ - Write equation for transient RL circuit
 11.mht ⁸²¹ - Ex 6-1, Ex 6-2
 13.mht ⁸²² - Outline circuit breaker selection
 10 - ⁸²³ Write the equation to calculate short circuit current in unloaded synchronous generator
 12 - ⁸²⁴ Express fault current using Z bus matrix criteria
 13 - ⁸²⁵ Outline the methods to select C-B
 17 - ⁸²⁶ Outline the equations to transform symmetrical components

- Q27 Short circuit 12. min - write the equations to calculate real & reactive power flow
- Q28 20 min - write the matrix to calculate seq: Ckt for n load.
- Q29 23 min - Sketch & write the equations for sequence Ckt for transmission line
- Q30 25 min - write equations for n connected transformer
- Q31 33 min - write equation to calculate 2L-G Fault
- Q32 34 min - Ex 3.4

- Transient stability 2 min - write power & relationship equation
- Q34 4 - Describe equal area criterion method
- Q35 7 - Describe oscillation two areas system
- Q36 10 - Explain ideal shunt compensator
- Q37 13 - Explain the way to improve the stability margin
- Q38 21 - Explain the method of voltage injection
- Q39 24 - Explain power flow control & power swing damping.

EEG15 Power system protection

(1 pt)

Textbook EEG15 + BAES06 power system stability & protection

- Q40 Payelo - Explain surge & transient
- Q41 - Noise & disturbance
- Q42 15 - Describe the recommended design & installation practice with circuit diagram
- Q43 21 - Describe transient & permanent faults
- Q44 38 - Explain substation automation

EEG18 Power Quality

XA Power Quality 1. pdf

- 845 Page 256 - what are the causes of disturbance in power system
 846 259 - Explain sag (dip) swell
 847 262 - Explain harmonics
 848 265 - write the equations for Form factor & Ripple factor
 849 272 - Pb 1, 2, 3
 850 283 - ~~Ex~~ describe harmonic models of transformer equation & diagram Page 284 / 286
 851 288 - Explain non linear harmonic model of transformer
 852 311 - sketch the circuits & explain the harmonic models of induction machines.
 853 334 - write mechanical equations of synchronous machine
 854 345 - describe the model of synchronous machine as applied to power flow.

Power Quality 2. pdf

- 855 Page 3 - How to measure temperature increases of ~~temperal~~ transformer?
 856 8 - Explain the decrease of lifetime due to an additional temperature rise.
 857 13 - describe the calculation of ~~temperature~~ steady state temperature rise Δt of electric apparatus based on thermal networks.
 858 41 - Explain lateral profile of magnetic field at ground level under 3 ϕ transmission line
 859 42 - write the factors influencing generation of corona
 860 45 - ~~Expt~~ describe the frequency control of an interconnected power system
 861 67 - Explain the types of non linear loads
 862 68 - Classify the filters employed in power system
 863 70 - describe the common types of passive filters for power quality improvement
 864 71 - write the equation for first order damped high pass filter.

BAE506 Power stability & Protection

— Power system Protection

Test

Power system protection studies & relay coordination

965 Explain distance relay setting

966 Explain overcurrent phase / Earth fault relay.

xx Test.

Power Transmission Planning & Engineering

967 Explain distribution system planning & Design

EEG16 power system protection (1pt)

968 Page 1 — Explain generator & motor protection (one page)

969 26 — write transformer protection (one page)

970 43 — write busbar protection (one page)

971 54 — write line protection (one page)

972 76 — write line protection with distance relay (1 page)

973 94 — write line protection with distance relay 1 page.

974 119 — Explain effect of dc offset, frequency on relay operation

975 119 — Express universal relay torque equation

976 121 — sketch relay operation diagram

977 143 — Explain distance relay (1 page)

978 156 — Explain carrier current relay (1 page)

979 175 — Explain voltage transformer (1 page)

980 187 — describe relay set relay response

37

BAC 507 Electro-mechanical Energy Conversion

(2pt)

- Chapter 7 - Page 3 - EX 2-1, Page 7 - EX 2-3 / 2-4
 Page 13 - EX 2-5
 3 - Explain MOSFET p-channel device Page 19
 EX 3-1 (Page 21)
 4 - Page 11 - Explain Transistor Rating.
 15 - Explain Transistor Switching Characteristics.
 19 - Explain Dynamic Characteristics of MOSFET
 7 - Page 11 - 2 sketch Negative gate drive cut
 10 - Page 5 - EX 10-1, Page 9 - EX 10-2
 Page 13 - EX 10-3 Page 25 - EX 10-5
 Page 31 - EX 10-6
 13 - Page 15 - EX 13-1, Page 19 - EX 13-2
 Page 21 - EX 13-3, Page 31 - EX 13-4
 Page 39 - EX 13-8
 17 - Page 21 - EX 17-2, Page 19 - EX 17-1
 25 - EX 17-3 41 - Page 17-6

EE 602 motor control Electronics (1pt)

EE 602 motor control Electronics

- Page 15 - Explain modulation method DC $\rightarrow$ AC conversion
 Page 18 - Explain Third harmonic PWM
 29 - Explain Slip frequency control
 47 - Indicate electronic noise problem areas in a motor drive system
 52 - Sketch the ground architecture
 176 - Explain dc motor control using power switching regulator
 210 - Describe Electrical Characteristics of IGBT
 219 - Explain Power rectifier & power transistor

- q12 Page 19 — sketch Robotic interfacing circuit
 q13 — 20 — sketch transmitter circuit
 q14 — 21 — sketch input circuitry
 q15 — 43 — Explain Robotic sensors
 q16 — 44 — Explain Proximity sensor
 q17 — 46 — Explain temperature sensor
 q18 — 79 — Describe the robotics communication system

BAE 502 Industrial Engineering & Industrial management

q19

Based on the knowledge that you gain in the subject, write a Project report ~~for the~~ ~~of the~~ describing the duties & responsibilities of a project manager outlining the following points

- (1) How to acquire information
- (2) Job of project manager
- (3) How to manage human resources
- (4) Planning the organization
- (5) setting up the operation strategy
- (6) manage the quality
- (7) manage the finances
- (8) manage the strategy
- (9) organize the organization
- (10) provide leadership
- (11) motivate the staff

The ~~70~~ The report should be ~~12-15~~ ^{around} 20 pages.

BAE 605 Engineering management

(5pt)

mgt 502 operation management (1pt)

- ans
- a Explain product design & process selection
 - b Explain total quality management
 - c Explain capacity planning

mgt 503 production & operation management (1pt)

- ans
- a Plan the production
 - b Explain how to manage the inventory
 - c Explain the setting of operation strategy

mgt 504 project management

(1pt)

- ans write a report related to project management containing
- project organization, planning, progress & performance measurement, risk management, documentation, audit, closure

mgt 505 quality management

(1pt)

- ans write the essay on quality management containing background, standard model, strategic quality management

mgt 506 Strategic Financial management (1pt)

- ans write the essay on financial management
- cap including capital budgeting, treatment of uncertainty, debt valuation & cost of capital

BAE 601 computer programming

(3pt)

Submit the programming project as given by teacher
 925, 926, 927

BAE 602 computer network

(1pt)

ICT 202 IT Network (2016 Study Guide)

(1pt)

928 20 Tutorial 4, 929 Tutorial 5, 930 Tutorial 7, 931 Tutorial 10
 932 Tutorial 14

BAE 602 computer network(computer part
network ppt lecture)

933 Presentation 3 - Explain client server computing
 934 5 - describe network cable
 935 12 - Explain running network program
 936 17 - Explain server operation system

1pt

Networking lessons - power points

937 Ch 4-1-V1 - Explain digital transmission
 938 Ch 10-1-V1 - Explain error detection & correction
 939 Ch 6-2-V1 - Analog Transmission
 940 Ch 4-1-V1 - Explain digital transmission
 941 Ch 3-1-V1 - Explain data & signal
 (a) sine wave (b) wave length
 (c) Time & frequency domain
 (d) composite signal
 (e) Bandwidth
 942 Ex 3.1, 943 Ex 3.2, 944 Ex 3.3, 945 Ex 3.4, 946 Ex 3.5, 947 Ex 3.6, 948 Ex 3.7, 949 Ex 3.8

ICT 203 Information System Analysis & Design

* Information System Analysis 1. pdf

948 Page 4 - what are the needs for organization?

949 Page 6 - describe the size of organization & information requirement

950 Page 14 - compare manual vs computerized information system

what is computer based information system?

951 Page 15 - describe the components of a system

952 Page 23 - Explain information architecture

953 Page 25 - Explain management Information system

954 Page 26 - Explain decision support system

955 Page 28 - How do you understand data mining?

956 Page 32 - Explain Executive support system.

957 Page 50 - what are the requirements for to plan for system development

Page 51

958 Explain Tactical Plan / Strategic Plan / what is system development?

959 Page 57 - outline the components of system design

960 Page 82 - what contents should be included in security policy?

961 Page 100 Explain risk based audit approach.

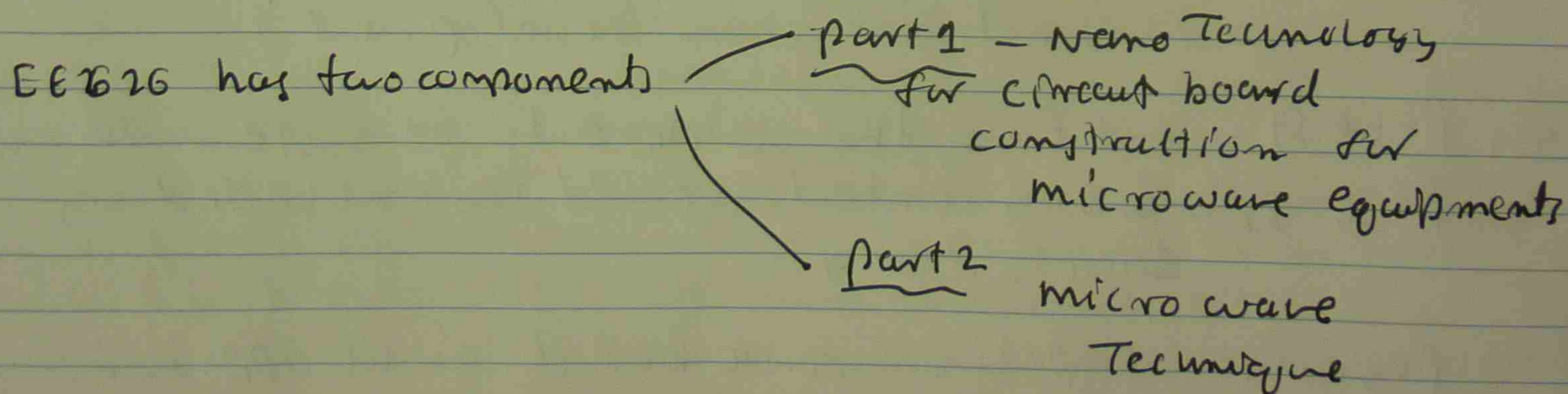
962 Page 101 what are the phases of risk management?

42 BAE 603 Software Engineering + ICT 106

Software Engineering

- 963 Lecture 2 - Describe the process to develop the software
- 964 Lecture 3 - Explain how to do feasibility study for development of software
- 965 Lecture 5 - Outline the required documentations for software design
- 966 Lecture 9 - What is source code management?
- 967 Lecture 8 - What is Unified Modeling Language?
Describe the source code management
- 968 Lecture 14 - Explain Database architecture, real time transaction and batch processing by using necessary flow diagrams.
- 969 p. Lecture 17 - Explain distributed objects in the system life cycle.
- What are the methods for evaluation of usability
- 970 Lecture 19 - ~~Ass~~ How will you ~~access~~ assess the performance of computer systems?
- 971 Lecture 20 - Explain the coding standard tools for debugging
- 972 Lecture 21 - Explain reliability metrics for distributed system
- 973 Lecture 22 - What are the process of validation & verification?

EE626 Nano Technology (part 1)



- Q74 Page 10 - Define nano technology. - Chap 1
- Q75 ~~Page~~ Chap 2 - Page 20 - describes the materials utilized for Nano Technology products.
- Q76 Page 24 - What are the possible motivations for miniaturizing a device?
- Q77 Page 26 - What are the issues related to miniaturization?

Q78 Chap 3 Explain the materials utilized for Nano technology in the following aspects

Page 28 → 30

- Chemical reactivity	Electronic energy level
- Solubility	Electrical conductivity

Q79 Page 32 - Write the formula to describe Electron confinement

Q80 write the equation to express chemical reactivity

Q81 describe the mechanical properties of Nano technology devices.

Page 36 - Sketch an evolutionary design algorithm

Q82

Chapter 4

Q83

- Page 41 - Describe non imaging approach
- 44 - AFM resolution
- 46 - methodology of self assembly

44

BAE 604 Telecommunication Engineering

H046 Telecommunication 1

(2pt)

984 Page 1 - Explain modulation

985 2 - sketch communication system block diagram

986 3 - Ex 1.1

987 4 - Ex 1.2

988

Page 6 - Ex 1.4

989 Page 11 - Ex

990 Page 14 - Ex

Page 16 - wh

991 Page 16 - what are the reasons for modulation?

992 Page 19 - Pb

993 Page 21 - Pb

994 Page 24 - Describe the operation of an amplitude modulator

995 Page 26 - Explain amplitude modulation reception

996 Page 30 - Pb

997 Page 36 - what are the advantages of SSB

998 Page 40 - sketch SSB Transmitter

999 Page 45 - sketch the block diagram of SSB Receiver

H046 Telecommunication 2

1000 Page 4 - Pb, Page 10 - Pb, Page 17 - sketch RF amplifier

1003 Page 24 - Explain frequency conversion technique.

1004 Page 26 - Pb

1005 Page 34 - what is frequency hopping?

1006 Page 40 - Explain pulse modulation

1007 Page 44 - Explain pulse position modulation

H046 Telecommunication 3

1008 Page 1 - Explain PCM / TDM Repeater with sketch

1009 Page 4 - Pb

1010 Page 5 - Explain code transmission

1011 Page 13 - Explain ISDN

1012 Page 15 - Describe Network Topologies

1013 Page 19 - Pb, Page 21 - Pb, Page 22 - Pb

1015

1017

1016 Page 26 - Explain ground wave propagation, Page 27 - Pb

- 1018 Page 31 - Explain the antenna antenna.
- 1019 Page 35 - Pb
- 1020 Page 37 - write the equation for quarter wave matching.
- 1021 Page 38 - Explain fibre optics communication
- 1022 Page 39 - Pb 1 / 2
- 1023 Page 40 - Pb 3
- 1024 Page 45 - Pb 5
- 1025 Page 46 - Pb 6
- 1026 Page 49 - Describe Fibre optics LANs

EE525 Data communication

(1 Pt)

- 1028 Pages - Explain Two state communication system
- 1029 Page 13 - Sketch universal seven part data circuit
- 1029 Page 22 - what are the parts of data terminal.
- 1030 Page 32 - why redundancy is used in communications?
- 1031 Page 33 - Describe the various types of data transmission circuits.
- 1032 Page 41 - Explain Asynchronous modems & Interfaces on following aspects - Analog modulation (Page 43)
Low speed modem operation (p 44)
Time Division Multiplexing (p 48)
- 1033 Page 62 - Sketch (i) synchronous modem block diagram
(ii) modem Transmitter block diagram
(iii) modem Receiver block diagram
- 1034 Page 92 - Explain convolutional coding.
- 93 Half duplex protocol
- 97 Transparent Text mode
- 99 Synchronous data Link control

1035

Page 349

Explain (i) VHF band (ii) UHF channels

1036

Page 351 -

Frequency deviation

1037

351 -

Frequency modulated sound

1038

352

Sketch the diagram of a direct frequency modulated transmitter

1039

Page 357 -

Explain folded dipole antenna with sketch.

1040

Page 309 -

Explain horizontal pulse timing

1041

Page 310 -

Describe line pairing

1042

313 -

Vertical interval reference

1043

315 -

Luminance signal

BAE 606 Building service Electrical & mechanical Engineering

2 pt

Building construction 1

Page 5 → 12, 13 → 20, 40 → 47

117 → 125, 173 → 175, 181, 237 - 239

1044 Write an essay on building construction consisting of

- (i) making building (ii) Foundations (iii) Selecting materials - wood (iv) Different constructions of walls (v) concrete construction (vi) Interior Finish

Air conditioning & Refrigeration

1045

Page 106 -

Sketch line voltage bimetal sensing device & explain

1046

Page 107 -

Write the method to measure the temperature of fluids.

1047

Page 237 - Describe the performance of radiant heating panels

1048

Page 238 - Sketch the control circuit for forced air electric furnace.

1049

Page 307 - Explain self contained humidifier

1050

Page 316 - Explain the following

(i) Package air conditioning

(ii) Split system air conditioning.

1051

Page 329 - Describe the perimeter loop air ventilation system

1052

Page 337 - Design Industrial air distribution system (Sketch).

XX Sanitation & water supply in low income countries

Annex (A) (Page 124)

1053

Write the equations for the following

(i) Effective pit volume

(ii) Pit side wall area

(iii) The effective depth for infiltration (circular pits of diameter)

~~(iv)~~

Annex (B)

1054

Write the note on hydraulic design of simplified sewers.

1055 Write the notes on properties of a circular section.

1056

Page (132)

Write the design procedures of sewer system.

1057

Express the formula to calculate minimum sewer gradient.

1058

Page 135 - Express the formula to calculate

sewer diameter.

Page 138

- Describe hydrogen sulphide control

Page 136 - Pb

EE 617 Building Electrical & mechanical system (1pt)

1060 Page 35 - out line climate comfort & design strategies of building construction.

1061 Page 78 - Ex 4.1, Page 79 - Ex 4.2

1062 Page 118 - Ex 5.1 Part D

1063 Page 92 - calculate coefficient of Transmission "U" for masonry cavity wall.

1064 Page 124 - Explain cross ventilation

1065 Page 126 - Explain night ventilation of thermal mass

1066 Page 134 - Ex 5.7

1067 Page 232 - Explain all air HVAC system.

1068 Page 233 - Ex 7.1

1069 Page 281 - Describe the types of pumps used for building water supply system.

1070 Page 322 - sketch the out line diagram of sewage pipe system.

1071 Page 368 - Explain fire safety & environment control system.

1072 What are the major factors influencing fire growth?

1073 Page 369 - Explain Class A, B, C of interior finish & Requirements for interior finish, summary of life safety code.

1074 Page 483 - Ex 18.1, Page 484 - Ex 18.2

1076 Pages 82 - Ex 20.1
↳ 584

1077 Page 628 - out line the elements of residential signal system

- 1078 Page 19 - Explain sensible heat, latent heat
- 1079 Page 286 - Explain - passive solar design
- 1080 Page 288 - Explain air solar collector with sketch
- 1081 Page 295 - Draw the connection diagram of water storage / water distribution Auxiliary heat by conventional hot water boiler.
- 1082 Page 305 - Explain (i) Relative Humidity, (ii) Humidifier
- 1083 Page 318 - Sketch split type air conditioning & refrigeration system for building
- 1084 Page 325 - Design building air ventilation system

PROJECT

- 1085 Use the work sheets provided from page 399 → 442
- Design ventilation system for a given building.

50

BAE 607 Radio wave Propagation & microwave Technique

(2pt)

Radio wave Propagation

Introduction, Radio wave Propagation. ppt

- 1086 Slides - write equation for spherical wave,
- 1087 Slides - sketch propagation over a flat earth
- 1088 17 - write equations
- 1089 page 20 - Explain site shielding
- 1090 page 44 - Express local mean model
- 1091 48 - Express fast fading model

1. ppt (1 propagation. ppt)

Page

- (5) Explain delay spread 1093 page (6) Explain outdoor propagation
- 1092
- 1094 page 12 Explain indoor propagation

03. Electromagnetic Propagation. ppt

- Page 10 - write the equations for Electric & magnetic fields propagate as wave
- 1095

Antenna Propagation 1. pdf

- 1096 Page 1 - Express general frequency range
- 1097 Page 4 - write Line of sight equation
- 1098 Page 6 - write the equation for thermal noise.

ARC Slides wave prop. pdf

- 1099 Page 13 - sketch two rays Propagation
- 1100 — 20 - multiple unite edges
- 1101 — 23 - Describe the different types of scattering
- 1102 — 25 - Explain multipath Propagation

Chap 5. ppt

- 1103 Page 3 - What are the patterns of radiation
1104 Page 6 - write the formula to calculate antenna gain
1105 Page 7 - Sketch Line of sight propagation
-

Chap 03. ppt

- 1106 Page 6 - Explain (i) Reflection (ii) Diffraction
(iii) scattering
1107 Page 7 - What are the effects of radio propagation
1108 Page 10 - Write the equations to calculate Land Propagation
1109 Page 21 - How do you understand Slow fading?
1110 — 23 - How do you understand Fast fading.
-

Chap 7 note. ppt

- 1111 Explain Ionosphere. & how it reflects radio waves.
-

Chap 12. ppt

- 1112 Page 7 - Explain Radio frequency Interference
1113 — 12 - Polarization of electrical field
1114 — 23 - Describe ground waves.
-

Lecture 2. ppt (Lecture 2. Radio communication. ppt)

- 1115 Slides - Explain medium for communication
1116 Slide 35 - How what is AM & FM?
-

week 3. ppt

- 1117 Page 6 - Describe Free space Propagation model
1118 Page 17 - pb

microwave Technique

ECE 5014 microwave PPT

1119 Page 2 - What are the methods of feed at the antenna,

1120 3 - What are the methods of feed with resonant line

1121 5 - Explain single wire feed system

1122 8 - Explain delta matched feed system

1123 12 - What is artificial line matching system?

Chap 02 Page 9 - Ex 2.2.1, Page 16 - Ex 3.2.6

1124

1125

Chap 03 Page 3 - Ex 3.1.1

1126

Chap 04 Explain couplers, combiners, dividers

1127 Page 1 (directional coupler

1128 Page 4 write the mathematical model for 4 port coupler

1129 Page 23 - write equations for even mode.

Chap 13

1130

write mathematical equation for mixers

Chap 14

1131 Page 1 What is two port stability

1132 Page 9 - Ex 14.1 what is simultaneous conjugate match

Chap 16

1133 Page 9 Explain thermal noise with necessary equations.

EE 625 Radio wave Propagation

1 Pt

Page 39 - Express Maxwell equations for electro magnetic waves
1134

Page 43 - Describe wave polarization
1135

Pages 52 - Describe ground effects of circular polarization.
1136

Page 59 - Ex 3.1 Page 21 - Ex 3.5
1137

Page 92 - Ex 4.2, Page 94 - Ex 4.3
1139

Page 306 - What are FCC Guide Lines for RF safety
1141

EE 626 Microwave Techniques

Text - EE 625 Radio wave Propagation

Page 244 - Ex 10.1, Page 250 - Ex 10.4
1142 1143

m J part 1

Page 42 - write formula for incidence & reflected waves
1144

50 - calculate voltage transfer function
1145

59 - Drive formulae for analysis of ladder circuit
1146

Page 176 what are the properties of Strip Lines
1147

Page 184 - sketch field distribution of the even & odd mode, in couple Strip Line
1148

Page 244 - sketch TE₁₀ mode wave guide & equation.
1149

Page 251 - write resonant frequency equation
1150

m J part 2

- 1151 page 491 Explain Tunable Band Pass filter
- 1152 490 Explain mechanically tunable coaxial band pass filter
- 1153 S17 - write the equation for ellipsoidal resonator resonant frequency
- 1154 S54 - Sketch two resonator filter using wave guides
- 1155 S53 - Explain magnetically tunable band pass filter with wave guide input & output
- 1156 S60 - Explain 4 resonator magnetically tunable wave guide band stop filter.
- 1157 S20 Describe design principle for magnetically tunable band pass filter
- 1158 S16 Describe the properties of ferrimagnetic materials for magnetically tunable filter
- 1159 492 Provide the equations for generalized filter circuit using series resonators or impedance inverter
- 1160 490 ~~Ex~~ S24 Explain higher order magneto static mode.