



ANJUMAN-I-ISLAM'S
KALSEKAR TECHNICAL CAMPUS, NEW PANVEL

Set-05
2013-14

School of Engineering & Technology

Subject: Applied Chemistry II

Date: 21/02/2014

Marks: 15M

Duration: 1 hr

Class: FE

Branch: All

Instructions:

Sem II UT-I

At Wts: H=1, C=12, O=16, S=32, Cl=35.5, Na=23, Mg=24, Ca=40, N=14, Si=28, K=39

Note : 1. Question **No 1** is compulsory.

2. Attempt **any one** from the remaining two questions

Q1 Attempt **any three** of the Following:

6M

- What are composite materials? Give their classifications.
- Define and give the functions of matrix phase.
- Define GCV and NCV.
- List the characteristics of a good fuel.

Q2 Attempt the Following:

- Explain the method for the determination of percentage of Volatile matter and percentage of Nitrogen in the coal sample?

5M

- Find the % of C, H and N from following observations in an experiment of analysis of coal.

4M

i) 0.25 g of coal was burnt in combustion tube and exhaust gases were passed to tubes containing CaCl_2 and KOH respectively. The increase in their weight was 0.09g and 0.8g respectively.

ii) Contents of Kjeldahl's tube obtained from 0.42g of coal on heating with alkali liberated NH_3 gas which was passed in 50 ml of HCl , which on titration with 0.12N NaOH gave reading 36.8ml.

Q3 Attempt the Following:

- Explain sandwich panels with a neat labelled diagram.

5M

- A coal has the following composition by weight : C= 90%, O= 3%, S= 0.5% and NCV = 8490.5 kcal/kg. Calculate the % of H_2 and HCV of coal.

4M



ANJUMAN-I-ISLAM'S

KALSEKAR TECHNICAL CAMPUS, NEW PANVEL

School of Engineering & Technology

2013-14

Subject: Applied Physics-II

Date: 01/03/2014

Class : FE *Sem II*

Marks: 15

Duration: 1 Hr

Branch : ALL

UT-I
Retest- Sem-II

Note: All questions are compulsory.

Attempt any Three:

(4*3=12)

Q.1) Explain the basic construction of an optical fibre.

Q.2) Give any three applications of an optical fibre.

Q.3) Write a short note on Step index fibre.

Q.4) Distinguish between ordinary cable and OFC.

Q.5) Explain different losses in optical fibres.

Attempt any one:

(3*1=3)

Q.1) Calculate the numerical aperture of a fibre with core index $n_1 = 1.61$ and cladding index $n_2 = 1.55$.

Q.2) Calculate acceptance angle for an optical fibre. Given that refractive indices of the core and the cladding are 1.45 and 1.40 respectively.

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KALSEKAR TECHNICAL CAMPUS, NEW PANVEL

School of Engineering & Technology

Subject: Applied Physics-II

Date: 01/03/2014

Class : FE

Marks: 15

Duration: 1 Hr

Branch : ALL

Retest- Sem-II

Note: All questions are compulsory.

Attempt any Three:

(4*3=12)

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2013-14

ANJUMAN-I-ISLAM'S
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School of Engineering & Technology

Subject: SPA

Test: Unit - Test 1

Marks: 20

Duration: 1 Hr

Class: First Year *Sem II*

Branch: ALL

➤ Each Question carry 5 Marks

Attempt (any four) of the Following:

- 1) Explain different datatypes in C & write a program to find area and the perimeter of the rectangle
- 2) Explain with syntax ternary operator & write a program to find largest of the 3 number using Ternary operator
- 3) Draw a (flowchart or algorithm) and also write a program to find root of Quadratic equation
- 4) Write a program to find factorial of a number using (While Loop)
- 5) Write a program to find Fibonacci series up to 10 terms using (For Loop)
- 6) Write a program to reverse a number using (Do While Loop)

----- All The Best



2013-14

ANJUMAN-I-ISLAM'S
KALSEKAR TECHNICAL CAMPUS, NEW PANVEL
School of Engineering & Technology

Subject: SPA

Marks: 20

Class: First Year *Sem II*

Test: ReUnit-Test (I)

Duration: 1 Hr

Branch: ALL

Feb. 14

Instructions: Attempt ALL question.

- Q1. Define Recursive Function & also give an example [2 Marks]
- Q2. Write a program to find the given number is even or odd [2 Marks]
- Q3. Explain the term [2 Marks]
a. strlen()
b. strcpy()
- Q4. Explain Array with its Syntax and suitable example [2 Marks]
- Q5. Write a program to print following pattern [2 Marks]
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- Q6. Explain different types of datatypes in C [2 Marks]
- Q7. Compare while, do-while and for statements [4 Marks]
- Q8. Describe a structure student with id, name, roll number and Accept 5 values and display them [4 Marks]

----- All the Best -----



2013-14

ANJUMAN-I-ISLAM'S
KALSEKAR TECHNICAL CAMPUS, NEW PANVEL
School of engineering & technology

Subject: Applied Maths-II
Date: 20/02/14
Class: F.E
Semester: II

Marks: 20
Duration: 1 Hr
Branch: All
Test: First

U T I

Note: Q 1 is compulsory.

Solve **any one** from the remaining two questions

Q I Attempt the following:-

a. Solve $(D^2 - 1)(D - 1)^2 y = 0$ (2)

b. Solve $(y+1) dx - [(y+2) e^y - x] dy = 0$ (3)

c. Solve $\frac{d^3 y}{dx^3} - 4 \frac{dy}{dx} = 2 \cosh 2x$ (3)

d. Solve $(D^2 + 1) y = \cos 2x$ (2)

II. Attempt the following:-

a. Solve $\frac{dy}{dx} = 1 + y^2$ with initial conditions $x_0 = 0, y_0 = 0$; by Taylor's series method. Find the approximate value of y for $x = 1$, taking $h = 0.2$ (5)

b. Solve $\frac{dr}{d\theta} = r \tan \theta - \frac{r^2}{\cos \theta}$ (5)

III Attempt the following:

a. Using Euler's method, find the approximate value of y at $x=1$ in five steps, taking $h=0.2$,

$\frac{dy}{dx} = x + y$ and $y(0) = 1$ (5)

b. Solve $(xy^2 - e^{1/x^3}) dx - x^2 y dy = 0$ (5)



ANJUMAN-I-ISLAM'S
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2013-14

Subject: BASIC ELECTRICAL AND ELECTRONICS ENGINEERING Date: Feb. 14

Marks: 20

Duration: 1 Hr/s

Class: FE

Sem II

U.T.-I

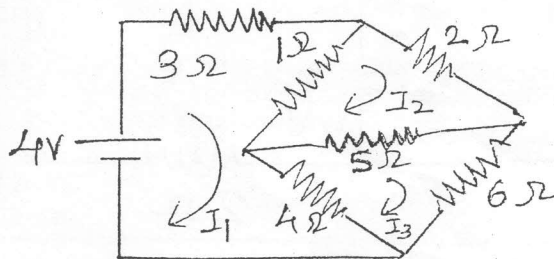
Branch: FE ALL

Q1) Solve any five out of seven

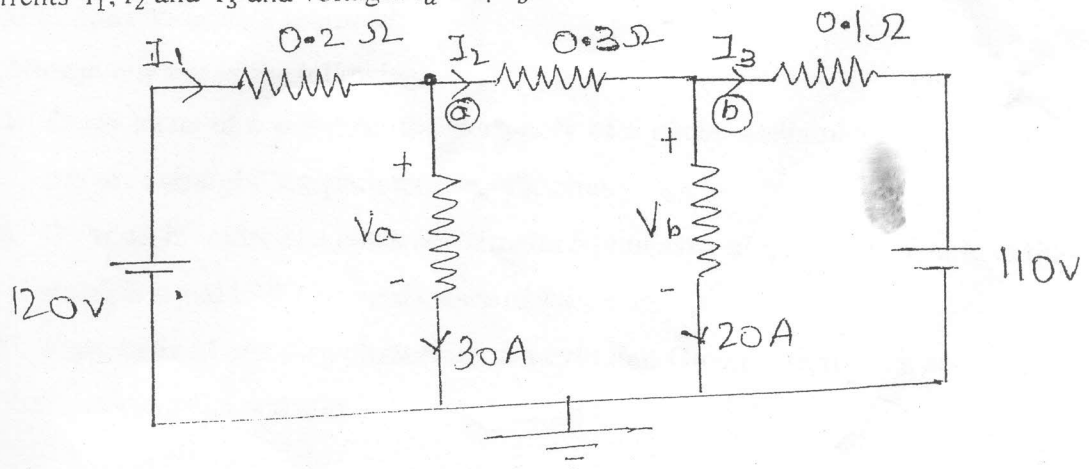
- A) What do mean by dependent and independent sources explain [2 MARKS]
- B) Explain KCL and KVL [2 MARKS]
- C) Explain Superposition theorem [2 MARKS]
- D) Define i) Frequency ii) waveform [2 MARKS]
- E) Find the following parameters of a voltage $v=200 \sin 314t$: [2 MARKS]
- i) Frequency ii) Form factor
- F) What is a transformer? [2 MARKS]
- G) What are rectifiers? [2 MARKS]

Q2) Solve any one out of two

- A) Find the current supplied by the battery [5 MARKS]



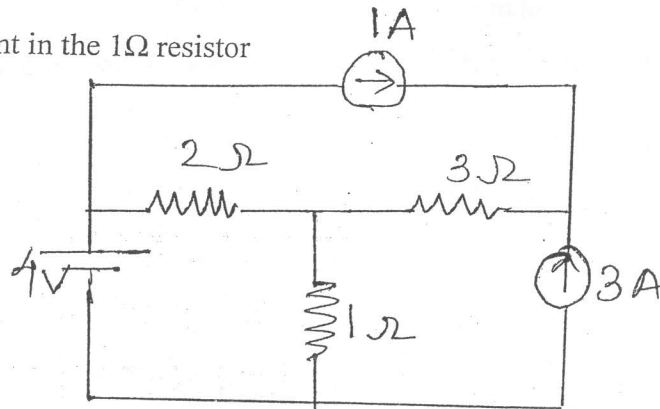
- B) Find currents I_1, I_2 and I_3 and voltages V_a and V_b . [5 MARKS]



Q3) Solve any one out of two

A) Find the current in the 1Ω resistor

[5 MARKS]



B) For the circuit shown find the value of resistance R_L for maximum power and calculate maximum power

[5 MARKS]

