

Book no 01
62

Set-02

2011-12
Sem II



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

UT-II

Subject: Applied Mathematics -II
Date: 23/04/2012

Marks: 50
Duration: 2 Hr

- Note : 1. Question No 1 is compulsory
2. Attempt any 2 out of remaining 3.

Q 1 a) Change the order of Integration. $\int_{-2}^3 \int_{y^2-6}^y f(x,y) dx dy.$ (5)

b) Find the total area bounded by Cardioid curve $r = 2(1 + \cos \theta)$ (5)

Q 2 a) Prove that $\int_{-1}^1 (1+x)^m (1-x)^n dx = 2^{m+n+1} \beta(m+1, n+1)$ (6)

b) Find the total length of Astroid curve $x^{2/3} + y^{2/3} = a^{2/3}$ (6)

c) Convert the Double Integral to Polar coordinates and evaluate. (8)

$$\int_0^2 dy \int_0^{\sqrt{2x-x^2}} \frac{x}{\sqrt{x^2+y^2}} dx dy$$

Q 3 a) Find the mass of lamina in the form of lemniscate $r^2 = a^2 \cos 2\theta$, if the density at any point varies as the square of its distance from the pole. (6)

b) Evaluate $\iint \sqrt{xy-y^2} dx dy$ where R is a triangle whose vertices are (0,0), (10, 1) and (1,1). (6)

c) Prove that $\int_0^1 \frac{x^3 - 2x^4 + x^5}{(1+x)^7} dx = \frac{1}{960}$ (8)

Q 4 a) Prove that $\int_0^1 \int_0^{1-x} \int_0^{x+y} e^z dx dy dz = \frac{1}{2}$ (6)

b) Find mass of the lamina bounded by $x^2 + 2y - 4 = 0$ and X axis if the density at any point varies as its distance from X axis. (6)

c) Evaluate by changing the order of Integration.

$$\int_0^2 \int_{\sqrt{2x}}^2 \frac{y^2}{\sqrt{y^4-4x^2}} dx dy$$
 (8)



Symbol of Secularism
& National Integration

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

Subject: APPLIED PHYSICS II
Date: 23/04/2012

Marks: 25
Duration: 1 Hr
Class: FE-All

N.B:

- 1) Draw neat and labelled diagram wherever necessary.
- 2) Attempt all the questions.

Q1. State and explain Heisenberg's Uncertainty principle. (4)

OR

Why the Newton's ring is always dark at the centre? (4)

Q2. Derive the expression for 1D Time Dependent Schrodinger's Equation. (8)

OR

Show how to calculate wavelength of a spectral lines by using Diffraction Grating. (8)

Q3. Derive the expression for diameter of dark and bright rings in reflected system. (8)

OR

Derive and discuss the resultant intensity equation due to N parallel slits Diffraction. (8)

Q4. In Newton's ring experiment the diameter of 4th and 12th dark rings are 0.400cm and 0.700cm respectively. Deduce the diameter of 20th ring. (5)

OR

Calculate the kinetic energy of an electron whose de-Broglie wavelength is 5000\AA . (5)



Symbol of Secularism
& National Integration

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

Subject: Computer Programming-II
Date: 24/04/2012

Marks: 50
Duration: 2 Hr
Class: FE-All

Note : Question 1 is compulsory. Attempt any 3 out of remaining 4

1. Write short notes on : (Any 4) (20)
 - a) Access visibility specifiers in Java
 - b) String handling functions
 - c) Interface
 - d) Wrapper classes
 - e) Synchronization

2. a) Explain lifecycle of an applet. (5)
b) Explain applets in terms of the following: (5)
 - i) Create an executable applet.
 - ii) Adding applets to HTML file.
 - iii) Running the Applet.

3. With the help of suitable program explain Multithreading in terms of the following:
 - i) Creating Threads and Extending Thread.
 - ii) Stopping and Blocking Thread.
 - iii) Lifecycle of a Thread. (10)

4. Write a detailed note in terms of the following: (10)
 - a) try-catch with example
 - b) Write the steps to create a user defined package with example.

5. Attempt (any 1) of the following (10)
 - 1) Distinguish between:
 - i) Abstract and final class.
 - ii) Application and Applet

or

 - 2) Explain Inheritance with the help of example. (10)



Symbol of Secularism
& National Integration

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

Subject: APPLIED CHEMISTRY II
Date: 25/04/2012

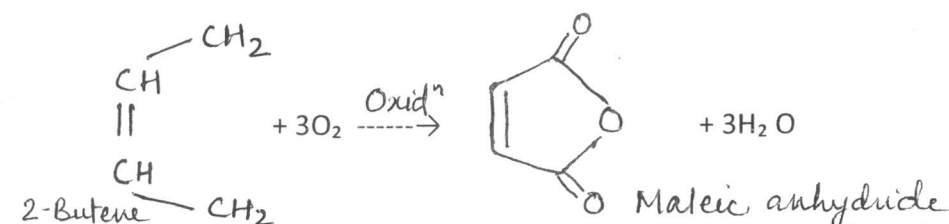
Marks: 25
Duration: 1 Hr
Class: FE-All

N.B:

- 1) Draw neat and labelled diagram wherever necessary.
- 2) Attempt all the questions.

Q.1.(a) Explain Adsorption theory of Catalysis. (5)

(b) Calculate the atom economy for the following reaction, to prepare maleic anhydride. (3)



Q.2. (a) Give the composition, properties and uses of Gun metal and Duralumin. (4)

(b) An electric current is passed through two cells arranged in series containing AgNO_3 and ZnSO_4 solutions with pt. electrodes. If 2.16×10^{-4} Kg of silver is deposited in AgNO_3 /Pt cell. Calculate the amount of Zn deposited in ZnSO_4 /Pt cell.
(At.wt. of Ag=108, Zn =65) (5)

Q.3.(a) List constituents of paints and give their functions. (3)

(b) With a neat labelled diagram, explain sacrificial anode method to control corrosion. (5)



Symbol of Secularism
& National Integration

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

Periodic Test - II

Subject: Engineering Drawing
Date: Wednesday, 25th April 2012
Class: FE-Sem-II. All Branches

Marks: 50
Duration: 2 Hr

Q1. Attempt any two of the following three questions (15 marks x 2 = 30 marks)

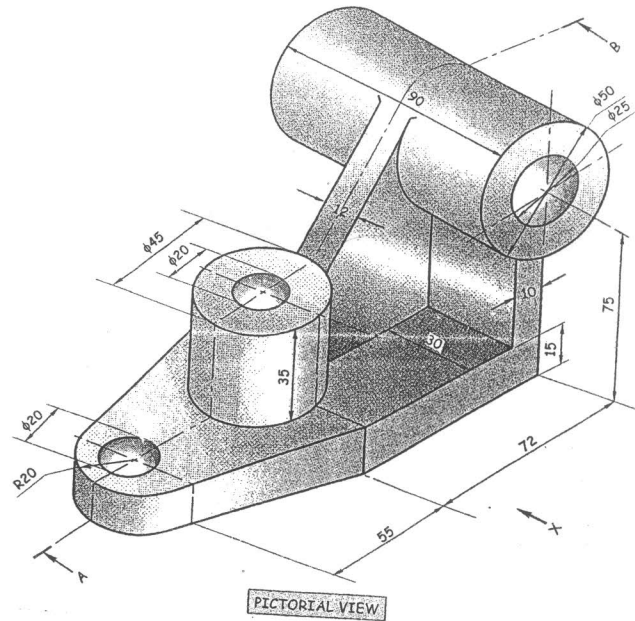
a. The figure shows the pictorial view of an object. Draw to scale full size, the following views by using first angle projection method:

1. Sectional front view along A-B

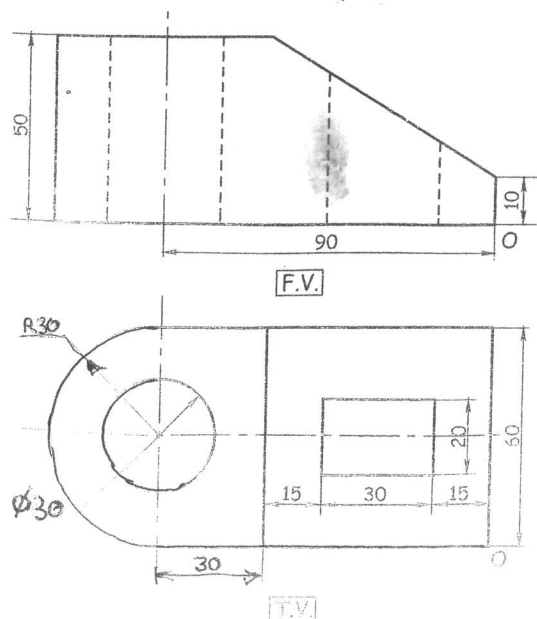
2. Left Hand Side View

3. Top View

Dimension all the views.



b. The figure shows two orthographic views of an object. Draw the isometric view using a natural scale. Take O as origin.



Block No
4

28

Anjuman-I-Islam's , Kalsekar Technical Campus,

School of Engineering,

Test No.02, Sub: Communication Skills,

Time: 01 Hr. Marks:25

Q.No.01) Write technical description of a 3G mobile phone. 07

Q.No.02)

Write a complaint letter to the Director of KTC against the canteen contractor who provides poor quality food and neglects the hygiene in canteen. 08

Q.No.03) Read the passage and answer the questions 10

Rock is considered as rigid solid material forming the surface the planet. There are three types of rocks found in the earth. The first type is called 'Igenous rocks'. Igenous rocks erupt from a very hot liquid found beneath the earth's surface due to volcanoes. This hot liquid is known as magma. Volcanoes are the mountains with large opening on the top and multiple openings on its either sides, through with magma and other gases escape with great force. The second type of rock is known as Sedimentary rock.

Sedimentary rock can be formed by deposits in water and sometimes by wind. Sand stone is common example of this type of rock. Sedimentary rocks are further subdivided into two major categories. The first sub category is known as 'Organic Sedimentary Rock'. These rocks are formed by living plants and animals, coal and limestones are common examples of Sedimentary Rocks. Coal comes from the plants, and limestones from crores of plants. Chemical sedimentary rocks erupt from the various chemical processes where in the minerals are deposited.

The third type of rock is known as Metamorphic Rock. This can be formed either of igneous or sedimentary rocks. Metamorphic rocks are formed by the intensity of high temperature pressure....

Questions:

- 1) What is rock?
- 2) Which are three major types of rocks?
- 3) What are the sub types of sedimentary rock?
- 4) What are volcanoes?
- 5) What is magma?
- 6) What are minerals?
- 7) Write a summary of above passage.