

**Subject-Applied Science –II (Chemistry)**  
**(320002)**

**MID-TERM EXAMINATION**

**MAX. MARKS -20**

**TIME: 01 HOUR**

- Q.1 Write any Ten of the following. (20)
- 1) Explain briefly Auf-bau Principle
  - 2) Explain bond formation in NaCl & O<sub>2</sub>
  - 3) Draw the shape of S & P orbitals
  - 4) Define pH & find pH of 0.001N HCl solution
  - 5) Give full meaning of  ${}_{11}\text{Na}^{23}$  &  ${}_{92}\text{U}^{235}$
  - 6) Explain strong electrolyte with suitable example
  - 7) Write Electronic configuration of  ${}_{18}\text{Ar}$  &  ${}_{26}\text{Fe}$ .
  - 8) Explain H-bonding & give the types of H-bonding
  - 9) What is degree of Ionisation? State the factors affecting degree of ionization.
  - 10) Draw FCC & BCC structure
  - 11) Define 1) Ionisation energy 2) Electron affinity.
  - 12) Differentiate between orbit & orbital.
  - 13) Explain Vander Waal's Forces of attraction.
  - 14) Give the characteristic of metallic bond

----- BEST OF LUCK-----



**Subject-Chemical Engineering Materials  
(320012)**

**MID-TERM EXAMINATION**

**MAX. MARKS -20**

**TIME: 01 HOUR**

**Instructions :- (1) Attempt any (4) questions  
(2) Each question weighs (5) marks**

- Q.1 Define:- (1) Boiling point (2) Thermal conductivity  
(3) Thermal expansion ( 4) Melting point  
(5) Material science
- Q.2 Explain various factors considered in selection of Engineering materials.
- Q.3 List different types of corrosion & briefly explain H<sub>2</sub>-evolution type **OR**  
O<sub>2</sub>-Absorption type mechanism.
- Q.4 Discuss various factors affecting rate of corrosion.
- Q.5 Discuss different methods of prevention of corrosion.

----- BEST OF LUCK-----

**Subject- Civil Engg. Drawing**

**(320006)**

**MID-TERM EXAMINATION**

**MAX. MARKS -20**

**TIME: 01 HOUR**

- Q.1 Draw the Plan & Elevation for the following details:- (10)
- (a) Dinning Room -9.0 m<sup>2</sup>
  - (b) Kitchen Room -10.0 m<sup>2</sup>
  - (c) Living Room -15.0 m<sup>2</sup>
  - (d) Bed Room -15.0 m<sup>2</sup>
  - (e) Bath & W.C.-2.0m<sup>2</sup> & 1.5 m<sup>2</sup>
  - (f) Varanda-2.0 m wide
- Q.2 Draw the section of wall footing. (5)
- Q.3 Write down the basic Principles of Planning of a building. (5)

----- BEST OF LUCK-----

**Subject- Elements of Civil Engg.**

**(320006)**

**MID-TERM EXAMINATION**

**MAX. MARKS -20**

**TIME: 01 HOUR**

Q.1 Explain Principles of surveying. (5)

Q.2 Differentiated between the Tie line and Check line. (5)

**OR**

Write short note on field book.

Q.3 Explain ranging of a surveying line. Describe the types of ranging. (5)

Q.4 Give conventional signs for the following ( any five ) (5)

- 1) North line
- 2) Main station
- 3) Chain line
- 4) Building
- 5) Tree
- 6) Boundary line
- 7) Metalled road

----- BEST OF LUCK -----

**Subject-Elements of Mechanical Engineering  
(320003)**

**MID-TERM EXAMINATION**

**MAX. MARKS -20**

**TIME: 01 HOUR**

- Q.1 Answer any three (9)
- (a) Compare V-Belt with flat Belt ( 04-points)
  - (b) Compare Gear drive , Bell drive & Chain drive (03-points)
  - ( c) What are the causes of accident in power transmission
  - (d) For which situation is gear drive preferable.
  - (e) Define slip & state its effect.
- Q.2 Solve the problem (5)
- (a) In a flat belt drive , a 400 mm diameter pulley rotate with a speed of 300 rpm, coefficient of friction between pulley & belt is 0.24 and angle of contact  $160^\circ$ . Find the power transmitted by belt if max tension in belt is 3000 N.
- Q.3 Answer any two:- (6)
- (a) Explain the types of flames used in gas welding.
  - (b) Write the principle of Arc welding & state two methods of Arc welding used in common
  - (c) Difference between fire tube & water tube boiler with example
  - (d) State limitations of unshielded Arc welding

----- BEST OF LUCK-----

**Subject-Mathematics-II S-201  
(320001)**

**MID-TERM EXAMINATION**

**MAX. MARKS -20**

**TIME: 01 HOUR**

Q.1 Attempt any two:- (5)

(a) Solve  $\lim_{x \rightarrow 1} \frac{x^2+x-2}{3x^2-2x-1}$

(b) Solve  $\lim_{n \rightarrow \infty} \frac{1^2+2^2+3^2+\dots+n^2}{7n^3-5n+3}$

(c) If  $f(x)=\frac{x-1}{x+1}$  then prove that  $f(x)+f(1/x)=0$

Q.2 Attempt any two:- (10)

(a) If  $x=e^\theta(\cos \theta +\sin \theta)$  and  $y=e^\theta(\cos \theta -\sin \theta)$  then find  $\frac{dy}{dx}$

(b) Find  $\frac{dy}{dx}$  if  $y=3^x \tan x$

(c) If  $ax^2+2hxy+by^2+2gx+2fy+c=0$  then find  $\frac{dy}{dx}$

(d) If  $y=\log_e(\sin x)$  then prove that

$$\frac{d^2y}{dx^2} + \frac{dy}{dx} + 1=0$$

Q.3 The equation of motion of a particle is  $S=t^3+3t$ ,  $t>0$  (5)

- (i) Find the velocity and acceleration at  $t=3$
- (ii) When do velocity and acceleration become equal?

**OR**

The equation of motion of a particle is  
 $S=t^3-6t^2+9t+4$

- (i) When  $V=0$  find  $s$  and  $a$
- (ii) When  $a=0$  find  $s$  and  $v$

----- BEST OF LUCK -----

**Subject-Mechanical Drafting  
(320008)**

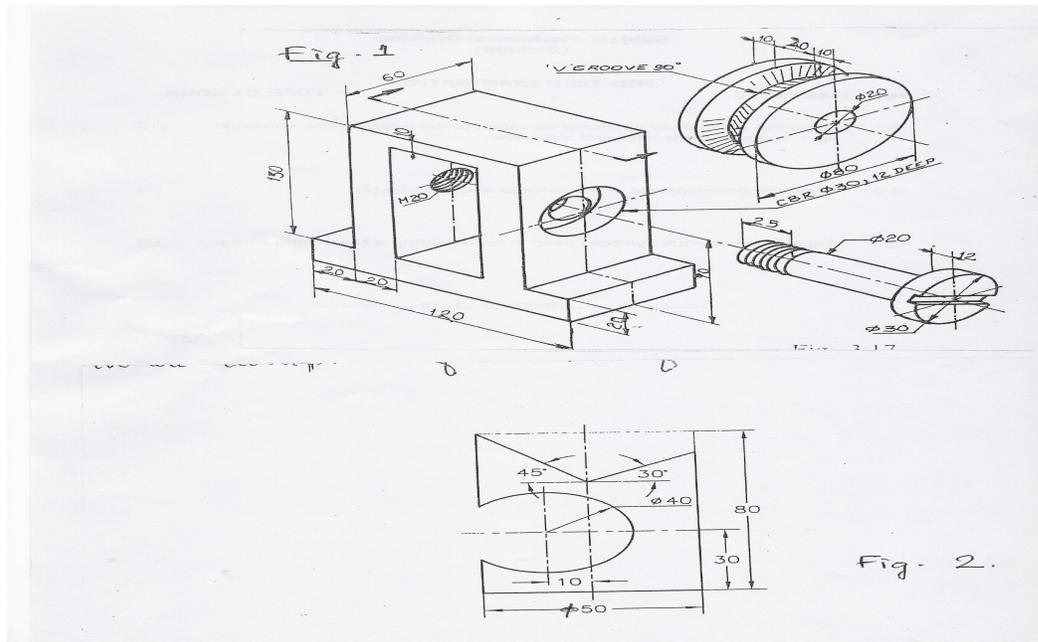
**MID-TERM EXAMINATION**

**MAX. MARKS -20**

**TIME: 01 HOUR**

- Q.1 Draw the assembled sectional elevation of the pulley block shown in fig.1 and also draw left hand side view (10)
- Q.2 Draw the development of the cylinder shown in fig.(2) (7)
- Q.3 Explain the various symbols used in representing a Machining Surface (3)

----- BEST OF LUCK -----



**Subject-NCES  
(320005)**

**MID-TERM EXAMINATION**

**MAX. MARKS -20**

**TIME: 01 HOUR**

- Q.1 Explain Beam Radiation.
- Q.2 What is Solar constant? Explain
- Q.3 State the various applications of Solar energy
- Q.4 Explain the difference between conventional & non-conventional sources

----- BEST OF LUCK-----



**GOVT. POLYTECHNIC,  
DAMAN  
MID SEMESTER-II EXAM-APRIL-2009  
SUB. CODE :320016  
SUB. NAME : PROGRAMMING IN C**

**TIME : 11:00 to 12:00**

**MAX. MARKS -20**

**Q:1 Attempt any Three (6)**

- (a) Write down the given words are Valid or Invalid. If not Valid specify the reason.
  - (i) integer      (ii) Float
  - (iii) goto      (ii) name\$1
- (b) Write a Difference between Compiler and Interpreter.
- (c) C is Middle Level Language. Justify the Statement.
- (d) Evaluate the Following Expression
  - (i)  $5\%2*4 + 8/2*3-10$
  - (ii)  $10/5\%2 - 2*4/8 + 20$
- (e) Write a Programme to find the Area of Circle  
 $A=\pi r^2$

**Q:2 Attempt the Following Questions**

- (a) Explain the Data types Available in C Language with Proper Example. (3)
- (b) Draw a flow Chart for finding Minimum from three Values (2)  
Or
- (c) Write a Programme to Find out Maximum from three Values By using Ternary Operator.

**Q:3 Attempt the Following questions:**

- (a) Explain Switch Statement with Example (3)  
or
- (a) Explain Bit wise Operator with Example
- (b) Write a programme to Reverse the Given Number. (4)
- (c) Write an out put for Following (2)
  - (i) 

```
int a,b,c;
a=5;
b=3;
c= a++ + b-- + --b + ++a;
printf("%d",c);
```
  - (ii) 

```
int a,b;
a=3;
b=2;
printf("%d", ++a + b++ - a++ - b++);
```

\*\*\*\*\* ALL THE BEST \*\*\*\*\*

MID TERM EXAM –APRIL 2009.

FUNDAMENTAL OF ELECTRICAL ENGINEERING.

20 MARKS.

Q.1 Define the following terms.(any five)

5 marks.

1) Cycle.

2) Frequency.

3) R.M.S Value.

4) Permeability.

5) Reluctance.

6) Flux density.

Q.2 what are the similarities and dissimilarities between electric and magnetic circuits.

5 marks.

Q.3(a) Define the Leakage Flux And Hopkinson's leakage co-efficient.

3 marks.

Q.3 (b) An iron ring 20 cm mean diameter and having cross sectional area 10 sq. Cm is wound with 200 turns. Find the current necessary to produce a flux of 2 m wb. Take relative permeability of iron = 500.

2 marks.

Or

Q.3 How alternating EMF is generated?

5 marks.

Q.4 convert the following vectors in polar form

5 marks.

1)  $25 - j 15$

2)  $-30 + j 25$

3)  $10 - j 45$

4)  $25 + j 80$

5)  $-40 - j 20$ .