

**YASHWANTRAO CHAVAN MAHARASHTRA OPEN UNIVERSITY,  
NASIK**

**HOME ASSIGNMENT**

(2016-17)

**B.Sc. Regular (V92)**

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**Instructions for the Students:**

- 1) All Questions are compulsory.
- 2) Each Sub-question carries 5 marks.
- 3) Each Sub-question should be answered between 75 to 100 words. Write every question's answer on separate page.

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**AEC111: English Communication**

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|---|-----|
| Q.1 How to identify and manage risk at the workplace? | 5 m |
| Q.2 What is the difference between group and team?    | 5 m |
| Q.3 Discuss the term- Group discussion.               | 5 m |
| Q.4. How feedback is important in communication?      | 5 m |

**S34121: PHYSICS -1**

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|---|-----|
| Q.1 Defines torque. Derive the relation between force and torque. | 5 m |
| Q.2 State and explain Newton's law of gravitation.                | 5 m |
| Q.3 Calculate the total energy of body executing SHM.             | 5 m |
| Q.4. Write a note on elastic limit?                               | 5 m |

**S37131:CHEMISTRY -1**

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|--|-----|
| Q.1 Explain the De-Broglie's equation.         | 5 m |
| Q.2 Give the application of born Hyber cycle . | 5 m |
| Q.3 Give the limitation of VSEPR theory .      | 5 m |
| Q.4. explain the concept exchange of energy .  | 5 m |

### S41141: MATHEMATICS -1

- Q.1 In case of the Taylor's series for  $e^x$  at  $x=0$ , show that the Lagrange's remainder  $R_n(x) \rightarrow 0$  as  $n \rightarrow \infty$ . 5 m
- Q.2 Obtain Maclaurin's series for  $f(x) = \ln(1+x)$  with the Lagrange's remainder. 5 m
- Q.3 If  $y = a \cos(\ln x) + b \sin(\ln x)$ , then show that  $x^2 \frac{d^2y}{dx^2} + x \frac{dy}{dx} + y = 0$ . 5 m
- Q.4. if  $f(x) = F(x-1)(x-3); x \in [0,4]$  then find c . 5 m

### AEC211 : ENVIRONMENTAL SCIENCE

- Q.1 Explain about the Land resources? 5 m
- Q.2 Write short note on Ecosystems? 5 m
- Q.3 Why are our grassland species vanishing? 5 m
- Q.4. What is Energy Conservation? Why is it necessary? 5 m

### S34221: PHYSICS -2

- Q.1 Explain review of vector algebra? 5 m
- Q.2 Write short note on charged conductor? 5 m
- Q.3 Explains Biot-Savart's law & its applications? 5 m
- Q.4. Write about transverse nature of EM waves? Why is it necessary? 5 m

### S37231: CHEMISTRY -2

- Q.1 Explain the Laws of Thermodynamics? 5 m
- Q.2 Write short note on Kirchhoff's equation. 5 m
- Q.3 Explains Buffer solutions. 5 m
- Q.4. Write about Statement of Third Law of thermodynamics. Why is it necessary? 5 m

**S41241: MATH -2**

- Q.1 solve the differential equation  $y = \sin p - p \cos p$  5 m  
Q.2 find general solution of following partial equation  $(\tan x)p + (\tan y)q = \tan z$  5 m  
Q.3 Explains Lagrange's method. 5 m  
Q.4. Write about charpits methods. Why is it necessary? 5 m

**SEC311: IT AND E-LEARNING SKILL**

- Q.1 Explain Block Diagram of a Computer? 5 m  
Q.2 Write short note on Cache Memory? 5 m  
Q.3 Explains Functions of Operating System? 5 m  
Q.4. Write about Input Devices? Why is it necessary? 5 m

**S34321: PHYSICS -3**

- Q.1 Explain Zeroth Law of thermodynamics and temperature. 5 m  
Q.2 Write short note on Mean free path? 5 m  
Q.3 Explains Macrostate and Microstate? 5 m  
Q.4. Write about Bose-Einstein distribution law? 5 m

**S37321: CHEMISTRY -3**

- Q.1 Explain Ideal solutions and Raoult's law. 5 m  
Q.2 Write short note on Phase Equilibrium? 5 m  
Q.3 Explains Reversible and irreversible cells? 5 m  
Q.4. Write about Carbohydrates: Classification, and General Properties? 5 m

**S41341: MATH -3**

- Q.1 Explain Finite and infinite sets. 5 m  
Q.2 Write short note on Cauchy's theorem on limits? 5 m  
Q.3 Explains Power series? 5 m  
Q.4. Write about Bounded sequence? 5 m