



**NATIONAL OPEN UNIVERSITY OF NIGERIA**

Plot 91 Cadastral Zone, Nnamdi Azikwe Express Way, Jabi, Abuja.

**FACULTY OF EDUCATION**

**COURSE CODE: SED835**

**COURSE TITLE: LABORATORY DESIGN AND MANAGEMENT**

**CREDIT UNIT: 3**

**TIME ALLOWED: 3 HOURS**

**INSTRUCTION: ANSWER QUESTION ONE AND ANY OTHER THREE**

- 1ai. Discuss how laboratory work at school level relates to science curriculum. **(5 marks)**
- ii. Justify your responses (i.e. your position) to question 1(ai) **(4 marks)**
- b. You have just been promoted as head of science in your school. In the school, the principal was asked to submit proposal for a science laboratory design without fume cupboard and a store. As an expert show how you can convince the authority the need for:
  - i. fume cupboard and **(5 marks)**
  - ii. a store in a standard science laboratory in a school. **(5 marks)**
- ci. Why is vibration inevitable in functional science laboratory? **(3 marks)**
- ii. Enumerate any five (5) sources of vibration in the functional science laboratory. **(3 marks)**
- 2a. In your own opinion, outline basic steps required in research report writing in science education. **(4 marks)**
- b. Distinguish between home hazard and science laboratory hazard. **(6 marks)**
- c. Identify and discuss any five (5) classes of hazardous chemicals in science laboratory. **(5 marks)**
- 3a. As a science teacher discuss how you give first aid treatment to the following laboratory accident:
  - i. Severe bleeding
  - ii. Shock
  - iii. Burns
  - iv. Absence of breathing
  - v. Eye injury**(10 marks)**
- b. Give five (5) reasons that could support the advocate for the combination of classroom and laboratory. **(5 marks)**

- 4ai. Discuss the necessity of fire extinguishers in science laboratory. **(3 marks)**
- ii. Explain the Components of a fire extinguisher **(2 marks)**
- bi. Differentiate between fire triangle and fire extinguisher. **(4 marks)**
- ii. Advance any two (2) reasons for the one you prefer more (i.e. fire triangle or fire extinguisher). **(2 marks)**
- c. Discuss the state of science laboratory in schools in Nigeria **(4 marks)**
- 5a. Make a sketch of science laboratory that accommodate 18 students at a time, storage chamber, a teacher demonstration table and a white board. **(5 marks)**
- b. Discuss five (5) major roles of laboratory technicians in science laboratory. **(5 marks)**
- c. Integration of computer software into the science practice exercises is a welcome idea. Discuss. **(5 marks)**