



NATIONAL OPEN UNIVERSITY OF NIGERIA

Plot 91 Cadastral Zone, Nnamdi Azikiwe Express Way, Jabi- Abuja

FACULTY OF EDUCATION

2020_1 Semester

COURSE CODE: SED313

COURSE TITLE: IMPROVISATION IN INTEGRATED SCIENCE

CREDIT UNITS: 2

TIME: 2 Hours

INSTRUCTIONS: Answer question No. 1 and any other two

1a Science teachers are always encouraged to improvise where instructional materials are not sufficient. Give 5 reasons for the needs of improvisation in integrated science. **10 marks**

1b Construction form of improvisation requires innovation and creativity. Find a suitable substitute for every piece of science equipment in the construction of aquarium in the school **10 marks**

1c Mention two areas where you can source for instructional materials for science teaching. **5 marks**

1d Briefly explain the function of an improvised lungs? **5 Marks**

2a. Instructional resources are very important in science classrooms. What are the resources for science teaching? Mention two types and the locations of such science resources **10 Marks**

2b. Mention five characteristics of images formed by plane mirror **10 Marks**

3a What do you understand by improvable experiments **5mks**

b. How do you locate an image of a pin on the plain mirror? Briefly explain **15mks**

4a. What kind of local materials could you extract lactic and citric acids from? **5 marks**

4b. Compare and contrast the sensitivities of the indicators produced locally with the conventional indicators. **15 marks**