



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA**  
**FACULTY OF SCIENCES**

**DEPARTMENT OF PURE AND APPLIED SCIENCE**

**2019\_1 SEMESTER EXAMINATION**

**COURSE CODE: PHY 310**  
**COURSE TITLE: ELECTRONICS II**  
**CREDIT UNIT 2**  
**TIME ALLOWED (2 HRS)**

**INSTRUCTION:** *Answer question 1 and any other three questions*

**QUESTION 1**

- (a) Define the following terms as they apply to power amplifiers:
  - i) Power Gain [2 marks]
  - (ii) Bandwidth [2 marks]
  - ( iii) Linearity [2 marks]
  - (iv) Noise Figure [2 marks]
  - (v) Output Dynamic Range [2 marks]
- (b) Mention and briefly explain five basic passive filter types. [7.5 marks]
- (c) What are the reasons why operational amplifier is recommended when a better regulation performance is required? [7.5 marks]

**QUESTION 2**

- (a) Explain the term multistage amplifier. [7.5 marks]
- (b) List the merits demerit of multistage amplifiers[7.5 marks]

**QUESTION 3**

- (a) List 4 problems in telecommunication that can be solved by applying negative feedback to amplifiers [6 marks]
- (b) Sketch three classes of power amplifiers and describe their operation? [9 marks]

**QUESTION 4**

- (a) List the idealized parametric quantities of an operational amplifier? [4.5 marks]
- (b) List three common problems associated with the common-emitter amplifier [4.5 marks]
- (c) Why is the bandwidth of a common-emitter amplifier low and how is this overcome? [6 marks]

**QUESTION 5**

- (a).What are the main characteristics of an amplifier? [7.5 marks]
- (b). Highlight the problems associated with the Common Emitter circuit. [7.5 marks]