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**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**

1. 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]**

1. Mention and briefly explain five basic passive filter types. **[7.5 marks]**
2. What are the reasons why operational amplifier is recommended when a better regulation performance is required? **[7.5 marks]**

**QUESTION 2**

1. Explain the term multistage amplifier. [7.5 marks]
2. List the merits demerit of multistage amplifiers[7.5 marks]

**QUESTION 3**

1. List 4 problems in telecommunication that can be solved by applying negative feedback to amplifiers [6 marks]
2. 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]