Assignment 8

Due on 2019-08-25, 23:59 IST.

The due date for submitting this assignment has passed. You are not required to do all submitted this assignment.

1. If an amplifier is designed for the maximum noise figure, its noise figure will be:
   - Equal to the minimum noise figure.
   - Less than the minimum noise figure.
   - Greater than the minimum noise figure.

   No, the answer is incorrect.
   Accepted Answer:
   Equal to the minimum noise figure.

   Common data for Questions 2 and 3: A transistor has the following noise parameters:
   - \( \text{NF} = 4 \), \( \text{gm} = 10 \), \( \text{fT} = 10^7 \) Hz, \( \mu = 100 \), and \( k = 0.01 \).

2. Center and twice the 3-dB noise figure (NF) will be, respectively:
   - 0.6, 0.66.
   - 0.6, 0.664.
   - 0.65, 0.664.

   No, the answer is incorrect.
   Accepted Answer:
   0.65, 0.664.

3. If the source reflection coefficient \( \Gamma_s \) is chosen as 0.625 + j0.35, the noise figure will be:
   - 2.6.6.
   - 2.66.
   - 2.69.

   No, the answer is incorrect.
   Accepted Answer:
   2.69.

4. Regarding the noise amplifier design steps, which one of the following is not true?

   - If \( \Gamma_s \) is chosen that for the required noise figure then \( N_s \) is chosen for the required gain.
   - If \( \Gamma_s \) is chosen for the required noise figure then \( N_s \) is chosen for the required gain.
   - \( N_f \) and \( N_s \) are chosen independently for the next noise figure and gain.
   - None of the above.

   No, the answer is incorrect.
   Accepted Answer:
   None of the above.

5. With reference to Fig. 1, which one among the following points should be selected for \( T_1 \) for the best possible noise figure (NF) design?

   - Point A
   - Point B
   - Point C
   - Point D
   - Point E
   - Point F
   - Point G
   - Point H
   - Point I
   - Point J
   - Point K
   - Point L

   No, the answer is incorrect.
   Accepted Answer:
   Point D

6. Output signal is distorted due to the cross over distortion in _______ power amplifiers.
   - Class A
   - Class B
   - Class C
   - Class AB
   - Class E

   No, the answer is incorrect.
   Accepted Answer:
   Class E

7. In a multi-choice system, velocity modulation of the electron beam is produced by:
   - Detector
   - Buncher cavity
   - Center cavity
   - Spur cavity

   No, the answer is incorrect.
   Accepted Answer:
   Spur cavity

8. The process of the magnet, which surrounds a travelling wave tube is to:
   - Accelerate the electron beam.
   - Hold the electron beam from spreading out.
   - Induce the velocity of the electron beam.
   - Show about the electromagnetic wave on the tube.

   No, the answer is incorrect.
   Accepted Answer:
   Hold the electron beam from spreading out.

9. In an amplifying, the output frequency is determined by:
   - Acceleration of the electron beam.
   - Dimensions of the resonant cavity.
   - Amount of DC voltage applied.
   - Length of the cathode.

   No, the answer is incorrect.
   Accepted Answer:
   Dimensions of the resonant cavity.

10. Which of the following choices can be used for broadband amplification of microwave energy?
    - Delay lines
    - Delayed junction
    - Impedance
    - Travelling wave tube

    No, the answer is incorrect.
    Accepted Answer:
    Travelling wave tube.