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**Question Paper Code : 52441**

**B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017**

**Fourth Semester**

**Electronics and Communication Engineering**

**EC2251 – ELECTRONIC CIRCUITS – II**

**(Regulations 2008)**

**[Common to PTEC2251 – Electronic Circuits II for BE (Part-Time)**

**Third Semester – ECE – Regulations 2009]**

**Time : Three Hours**

**Maximum : 100 Marks**

**Answer ALL questions**

**PART – A**

**(10×2=20 Marks)**

1. List the reasons for applying negative feedback in amplifiers.
2. State the Nyquist criterion for stability of feedback amplifiers.
3. State the condition for oscillation.
4. Draw the electrical equivalent circuit of crystal.
5. Draw the frequency response of the stagger and synchronous tuned amplifiers.
6. State the difference between loaded and inloaded Q.
7. What is the purpose of triggering in bistable multivibrators ?
8. What is a multivibrator circuit ?
9. Name any two applications of pulse transformers.
10. Why linearity correction is required in time base generation ?

**PART – B**

**(5×16=80 Marks)**

11. a) Discuss the effects of negative feedback on the properties of amplifiers in detail with relevant analytical expressions.

**(OR)**

- b) Explain the four types of negative feedback in amplifiers with suitable diagrams and discuss on their properties.



12. a) With a neat diagram, explain the operation of the Colpitts oscillator. Also derive the expression for the condition and frequency of oscillation.

(OR)

- b) With a neat diagram, explain the operation of the Wien-bridge oscillator. Also derive the expression for the frequency of oscillation.

13. a) Analyze a capacitance coupled single tuned amplifier circuit and derive the expressions for its important parameters.

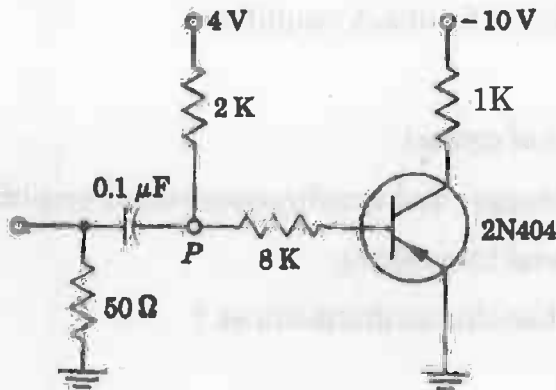
(OR)

- b) Discuss on the effect of cascading single and double tuned amplifier on bandwidth.

14. a) With circuit and waveforms, give a detailed account on transistor switching delay. For the circuit shown below, calculate

- a) the rise time and

- b) the time required for the collector current to rise to 10% of  $I_{CS}$ . Assume  $f_T = 10$  MHz and  $h_{FE} = 100$ .



(OR)

- b) With relevant diagrams, explain the operation of collector coupled astable multivibrator. Also derive the expression for the time period of the waveform.

15. a) With necessary diagram, explain the equivalent circuit of a pulse transformer. A pulse transformer has the following parameters :  $L = 5$  mH,  $\sigma = 40$   $\mu$ H,  $C = 50$  pF,  $R_1 = 200$   $\Omega$ ,  $R_2 = 2$  k $\Omega$ ,  $n = 1$ . Find the response to a 2  $\mu$ s – 10 V pulse.

(OR)

- b) What is the principle behind blocking oscillators ? With neat diagram, explain the operation of a monostable blocking oscillator with base timing.