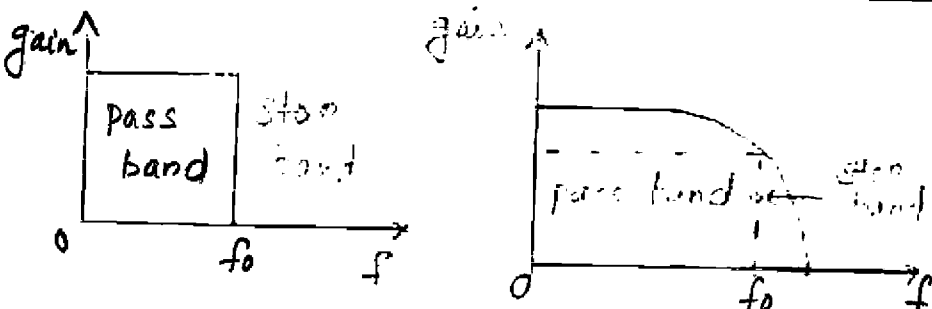
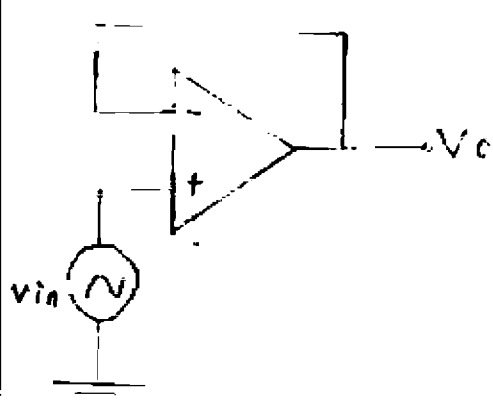


# SECOND YEAR HIGHER SECONDARY EXAMINATION MARCH 2019

SUBJECT : ELECTRONIC SYSTEMS

CODE. NO: SY 53

| Qn No | Sub Qns | Answer Key/Value Points                                                                                                                               | Score | Total |
|-------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|
| 1     |         | $f_0 = \frac{1}{2\pi\sqrt{LC}}$ <p>or</p> <p>'f<sub>0</sub>' of Hartley or Colpitt's</p>                                                              | 1     | 1     |
| 2     |         | Inductor                                                                                                                                              | 1     | 1     |
| 3     |         | LM317 (or any other variable Regulator Ic)                                                                                                            | 1     | 1     |
| 4.    |         | Electro magnetic Induction                                                                                                                            | 1     | 1     |
| 5     |         | Code Division Multiple Access                                                                                                                         | 1     | 1     |
| 6.    |         |  <p>Ideal Response      practical Response</p> <p>1 mark each</p> | 2     | 2     |

| Qn No | Sub Qns | Answer Key/Value Points                                                             | Score | Total |
|-------|---------|-------------------------------------------------------------------------------------|-------|-------|
| 7.    |         | (Barkhausen criteria) (1 mark)<br>or<br>Positive feedback } 2 mark<br>$A\beta = 1$  | 2     | 2     |
| 8     |         | Definition (2 marks)<br>Equation only (1 1/2 mark)                                  | 2     | 2     |
| 9.    |         |  | 2     | 2     |
| 10.   |         | Block diagram of public addressing system                                           | 2     | 2     |
| 11    |         | $\gamma = 0.3R + 0.59G + 0.11B$                                                     | 2     | 2     |
| 12    |         | Structure of optical fiber                                                          | 2     | 2     |

| Qn No | Sub Qns | Answer Key/Value Points                                                                                                                          | Score | Total |
|-------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|
| 13    |         | Word length explanation                                                                                                                          | 2     | 2     |
| 14    |         | circuit diagram of R <sub>c</sub> phase shift oscillator                                                                                         | 3     | 3     |
| 15    |         | Any three advantages of integrated circuits over discrete components (1 mark each)                                                               | 3     | 3     |
| 16    |         | JK flip flop using NAND gates (2 marks)<br>Truth table (1 mark)                                                                                  | 3     | 3     |
| 17    |         | Block diagram of monochrome TV Receiver                                                                                                          | 3     | 3     |
| 18    |         | working principle of CT scanner (1½ mark)<br>working principle of MRI scanner (1½ mark)<br>Or<br>comparison between CT and MRI Scanner (2 marks) | 3     | 3     |

| Qn No | Sub Qns | Answer Key/Value Points                                                                                          | Score | Total |
|-------|---------|------------------------------------------------------------------------------------------------------------------|-------|-------|
| 19    |         | <p>circuit diagram of astable multivibrator using IC 555 (3 marks)</p> <p>Explanation (1 mark)</p>               | 4     | 4     |
| 20    |         | <p>Block diagram of SMPS (3 marks)</p> <p>Explanation (1 marks)</p>                                              | 4     | 4     |
| 21    |         | <p>circuit of 8150 shift register (3 marks)</p> <p>Truth table (1 mark)</p>                                      | 4     | 4     |
| 22    | a       | Any two operating systems used in mobile phone (Android OS, Black Berry OS, iPhone OS etc Symbian) (1 mark each) | 2     | 4     |
|       | b.      | Basic Concept of Zigbee                                                                                          | 2     |       |
| 23    | a       | Total Internal reflection                                                                                        | 1     | 4     |
|       | b       | Explain critical angle                                                                                           | 3     |       |

| Qn No | Sub Qns | Answer Key/Value Points                                                 | Score | Total |
|-------|---------|-------------------------------------------------------------------------|-------|-------|
| 24    | a       | High pass filter                                                        | 1     | 5     |
|       | b.      | Circuit of RC differentiator                                            | 1     |       |
|       | c.      | circuit diagram of -ve clipper with -ve bias (3 marks)                  | 3     |       |
|       |         | OR<br>-ve clipper with -ve bias (1 mark)                                |       |       |
|       |         | OR<br>circuit of unbiased -ve clipper (1 mark)                          |       |       |
| 25    | a.      | Block diagram of power supply (2 marks)                                 | 3     | 5     |
|       |         | Explanation (1 mark)                                                    |       |       |
|       | b.      | Definition of load regulation                                           | 2     |       |
|       |         | OR<br>Equation                                                          |       |       |
| 26    | a       | Any 4 features of combinational and sequential circuits (1/2 mark each) | 2     |       |
|       | b       | Circuit of 1:4 demultiplexer                                            | 2     |       |

| Qn No | Sub Qns | Answer Key/Value Points                                                             | Score | Total |
|-------|---------|-------------------------------------------------------------------------------------|-------|-------|
| 26    | c       | Truth table                                                                         | 1     | 5     |
| 27.   | a.      | Block diagram of cable TV<br>(2 marks)                                              | 3     | 5     |
|       | b.      | Explanation (1 mark)                                                                |       |       |
|       | b       | Satellite communication figure<br>OR<br>Basic concept about satellite communication | 2     |       |