

**DAE 1<sup>st</sup> YEAR ELECTRONICS TECHNOLOGY****ELTR 114 Electrical circuits(Paper B)****Model Paper-1****Objective****Time:30 Min****Marks:15****Q. Encircle the correct answer.**

1. Transformer working depends on  
(a)self-inductance, (b)magnetic flux (c)mutual inductance (d)any of these
2. Step up transformer steps up----  
(a)Voltage, (b)current (c)power (d)capacitance
- 3.----- cannot be increased by transformer  
(a)current, (b)power, (c)resistance (d)inductance
4. Transformer coils are coupled  
(a)Electrically, (b)magnetically (c)horizontally (d)vertically
- 5.The purpose of laminating is to-----  
(a)decrease resistance (b)increase resistance (c)decrease Eddy current loss  
(d)increase power
6. In a series LC circuit at resonant frequency the ----  
(a)current is minimum (b)impedance is maximum (c)voltage across C is minimum  
(d)current is maximum
- 7.At resonance the phase angle equals ----  
(a)0 (b)90. (c)180. (d)270
- 8.In parallel resonance, the line current is----- at resonant frequency  
(a)maximum, (b)minimum (c)complete (d)often
9. Higher the Q factor of a circuit----- its bandwidth  
(a)Expansion, (b)narrower, (c)increase, (d)widen
10. A filter separates high and low-----  
(a)Voltages, (b)amplitudes, (c)frequencies (d)all of these
- 11.A -----pass filter provides output for the lower frequency  
(a)high, (b)low, (c)bandstop (d)band pass
- 12.In-----pass filter capacitors is in series with the load  
(a)high, (b)low (c)band (d)all of these
13. Resonant circuits are generally used for band----- and band stop filtering  
(a)pass, (b)prevent, (c)block (d)any of these
- 14.In high pass filters capacitance is in series with the load  
(a)series (b) parallel (c) vertical (d) shunt
15. Resonant circuits are generally used for band -----and band stop filtering.  
(a)pass (b) prevent (c) block (d) any of these

**DAE 1<sup>st</sup> YEAR ELECTRONICS TECHNOLOGY**

**ELTR 114 Electrical circuits(Paper B)**

**Model Paper-1**

**Subjective**

**Time: 2:30 Min**

**Marks:60**

**Section. I**

**Q.1 Write short answer to any 18 of the following questions**

**18 X 2 =36**

1. Define transformer
2. Define mutual inductance
3. Describe turn ratio of transformer
4. In list the types of transformers
5. Describe autotransformer.
6. Explain resonance
7. Define resonant circuit
8. Describe Q of a circuit
9. Define bandwidth.
10. Describe filter
11. Describe the purpose of filter
12. Define low pass filter
13. Describe high pass filter
14. Explain band stop filter
15. Define band pass filter
16. Describe the purpose of coupling
17. Define coefficient of coupling
18. Describe purpose of coupling.
19. Explain band stop filter.
20. Describe filter.
21. Define the rejecter circuit.
22. List the conditions of series resonance circuit.
23. Draw series resonant circuit.
24. Draw parallel resonant circuit.
25. Define mutual inductance.
26. Describe the construction of transformer
27. Draw the diagram of transformer

**Section. II**

**Attempt any three (3) questions**

**3 X 8 = 24**

Q.2 Explain the series resonant circuit with diagram in detail

Q.3 In list transformer losses and describe each

Q.4 Describe RC and LC low pass filter in detail

Q.5 Derive equation for Q of a resonant circuit.

Q.6 Write short notes on

- (1) K- Filter (2) M-Derived Filter

**DAE 1<sup>st</sup> YEAR ELECTRONICS TECHNOLOGY****ELTR 114 Electrical Circuits(Paper B)****Model Paper-2****Objective****Time:30 Min****Marks:15****Q. Encircle the correct answer.**

1. A transformer can operate from---- DC  
 (a)fixed (b)changing (c)positive (d)negative
- 2.An auto transformer has ---- winding  
 (a)One, (b)two, (c) three, (d)anyof above
- 3.A transformer represents and example of----- inductance  
 (a)linear (b)nonlinear (c)mutual (d)self
- 4.Thin sheets of silicon steel used for making transformer core are called  
 (a)Winding, (b)coils, (c)lamination, (d)mutual
5. Unit of inductance is called  
 (a)Farad, (b)Henry, (c)ampere, (d)ohm
- 6.A transformer consist of-----  
 (a)coils infinite, (b)stepped, (c)two, (d)longitudinal
- 7.Transformer coils are coupled  
 (a)electrically (b)magnetically (c)horizontally (d)vertically
8. For a series or parallel LC circuit resonance occurs when  
 (a)  $X_L = X_C$  (b)  $X_L > X_C$  (c)  $X_L < X_C$  (d)  $X_L \neq X_C$
- 9.When either L or C is increased the resonant frequency of the LC circuit  
 (a) increases (b)decreases (c)remain the same (d)is determined by shunt r
10. In a parallel LC circuit at the resonant frequency the ----  
 (a)line current is maximum (b)inductive branch current is minimum  
 (c)total impedance is minimum (d)total impedance is maximum
11. A filter separates high and low ---  
 (a)voltages, (b)amplitudes, (c)frequencies, (d)all of these
- 12 .A---- pass filter provides output for the lower frequencies.  
 (a)high (b)low (c)band stop (d)band pass
- 13.A---- pass filter provides output for the higher frequencies.  
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14. In high pass filters capacitance is in series with the load  
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- 15.Resonant circuits are generally used for band -----and band stop filtering.  
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**DAE 1<sup>st</sup> YEAR ELECTRONICS TECHNOLOGY**

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**Model Paper-2**

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