

T.Y.B.SC. SEM – V (2014 COURSE) : WINTER - 2017

SUBJECT : PHYSICS ADVANCED ELECTRONICS

Day : Monday
Date : 30/10/2017

Time : 3:00 P.M. To 5:00 P.M.
Max. Marks : 40.

W-2017-0655

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the **RIGHT** indicate full marks.
- 3) Draw neat diagrams **WHEREVER** necessary.

Q.1 Attempt any **TWO** of the following: **(10)**

- a) Explain shunt regulated power supply with diagram. Derive necessary formula.
- b) Explain N-channel depletion type MOSFET with diagram. Draw its characteristic curve and explain.
- c) Explain the application of operational amplifier as differentiator.

Q.2 Attempt any **TWO** of the following: **(10)**

- a) Explain high voltage regulated power supply by using IC723.
- b) Obtain an expression for efficiency of amplifier with resistive load.
- c) Describe astable multivibrator using IC 555 with diagram.

Q.3 Attempt any **TWO** of the following: **(10)**

- a) Explain class A, class B, class C and class AB amplifiers with load line.
- b) Describe Colpitt oscillator with diagram.
- c) Describe non-inverting operational amplifier with diagram.
Why it is called as operational amplifier? Explain.

Q.4 Attempt any **FIVE** of the following: **(10)**

- a) Explain UJT with diagram.
- b) Describe the application of Opamp as integrator with diagram.
- c) Design 5 V, 30 mA regulated power supply by using IC 723.
- d) Write a short note on 'idea of A.C. load line'
- e) What is comparator? Explain with diagram.
- f) Explain the application of SCR with diagram.
- g) Describe cross over distortion with diagram.

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