

Total No. of Questions : 6]

SEAT No. :

P196

[Total No. of Pages : 2

BE/INSEM/APR-524

B.E. (Mechanical) (Semester - II)

402050B : SOLAR AND WIND ENERGY

(2015 Pattern) (Elective - IV)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates :

- 1) Draw suitable neat diagrams, wherever necessary.
- 2) Figures to right indicate full marks.
- 3) Use of electronic pocket calculator is allowed.
- 4) Assume suitable data, if required.

Q1) a) Define beam, diffused and global radiation. Derive an expression for total radiation on tilted surface. [6]

b) Explain present energy scenario and role of governing bodies for solar and wind energy. [4]

OR

Q2) a) Define Altitude angle, Incident angle, Zenith angle, Solar azimuth angle, latitude angle, and hour angle. [6]

b) Explain types of radiation measurement instrument, Explain any one measurement instrument with figure. [4]

Q3) a) Classify solar thermal collectors and Describe evacuated tube collector with the help of suitable diagram. [6]

b) Explain solar distillation with figure. [4]

OR

Q4) a) Classify solar concentrating collectors and explain Concentrated Fresnel linear receiver with figure. [6]

b) Explain concept of solar tower with figure. [4]

P.T.O.

- Q5)** a) Explain design methodology for solar photovoltaic system with solar cell equation. [6]
b) Write a short note on Solar p-n junction. [4]

OR

- Q6)** a) Explain solar PV System with block diagram. [6]
b) Explain with block diagram operation of standalone and grid interactive SPV System. [4]
