THE TEXTILE ASSOCIATION [INDIA]
G.M.T.A. EXAMINATION – 2017
SECTION –A PAPER –A4
GENERAL ENGINEERING

Date: 26.12.2017 Marks: 100 Time: 10.00am to 01.00pm

Instructions: 1. Attempt six question out of which Q.1 is compulsory.
2. Answer each next main question on new page.
3. Figure to the right indicates full marks.
4. Illustrate your answer with sketches and flow chart wherever necessary.
5. Use of non-programmable electronic pocket calculator permissible.
6. Mobile and any other communication devices are not allowed in exam hall.
7. Assume suitable data wherever necessary.

Q.1 Attempt any four of the following - (20)
(a) How many types of prime movers are used for generators? Explain in brief.
(b) Write in brief the principle of centrifugal compressor.
(c) What do you understand by draft in boiler? Explain in brief.
(d) Explain in brief the velocity triangles and analysis of forces in Francis Turbine.
(e) Explain in brief the difference between centrifugal pump and reciprocating pump.

Q.2 What do you understand by heat exchanger? Explain in details the different types of heat exchanger. (16)

Q.3 (a) Write the Newton’s law of cooling and its significance with respect to heat transfer. (08)
(b) What do you understand by Black Body? Write in short with respect to heat radiations. (08)

Q.4 (a) What is difference between accessories and mountings in steam turbine? Explain in short giving examples. (08)
(b) Write the principle of Induction Motor in short and explain how it works. (08)

Q.5 Write the principle of DC motors in brief. Also explain the merits and demerits over AC motors. (16)

Q.6 (a) What do you understand by – (08)
(i) Thyristor.
(ii) Critical thickness of insulation.
(iii) Half wave & full wave rectifier.
(iv) Idle diodes.
(b) Write the precautions to be taken while operating the diesel power plants. Explain in brief. (08)

Q.7 (a) How many types of fuels are used in steam power plants. Explain in details. (08)
(b) Explain Kirchoff’s current laws and Voltage law in brief. (08)

Q.8 (a) Explain in brief the Fourier law of heat conduction for isotropic materials. (08)
(b) How do you compare the specific speeds of hydraulic turbine? Explain in brief. (08)