THE TEXTILE ASSOCIATION [INDIA]
G.M.T.A. (REVISED) EXAMINATION -2014
SECTION-A PAPER- A-4
GENERAL ENGINEERING

Date : 27.12.2014  Marks : 100  Time : 10.00 am to 1.00 pm.

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 indicate 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) Write in short the half wave and full wave rectifiers and explains their uses in textiles.

(b) Explain Kirchoff’s current laws and voltage law in brief.

(c) Explain in brief the velocity triangles and analysis of forces in Francis turbine.

(d) Explain in short the newton’s law of cooling and significance of the heat transfer coefficient.

(e) Explain in brief the difference between centrifugal pumps and reciprocating pumps.

Q.2  Write the basic principle of Steam turbine. Also explain as what you understand by under expansion and over expansion of nozzles.  (16)

Q.3  Explain Fourier law of heat conductions for isotropic material. Also write the different modes of heat exchanges.  (16)

Q.4  Define the principle of black body. Also explain the laws of radiations and its intensity.  (16)

Q.5  Explain the principle of pelton wheel analyzing the force and power generations.  (16)

Q.6  Explain in brief the different Diesel power plant available. Also give the ways and means to store and handle the fuel.  (16)

Q.7  Write the principle of DC motors in short. Also explain the merits and demerits of DC motor over AC motors.  (16)

Q.8  (a) Write the principle of synchronous motors and explains its working  (08)

(b) What do you understand by –
   (i) Transistors  (ii) Thyristors
   (iii) Tachogenerators  (iv) Diodes

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