THE TEXTILE ASSOCIATION (INDIA)
GMTA EXAMINATION 2019
Section – A Paper – A.4
GENERAL ENGINEERING
Marks – 100

Date: 24.12.2019
Time: 10.00 AM to 1.00 PM

Instructions:
1. Answer any six questions out of which Question No 1 is compulsory.
2. Answer each next main question on a new page.
3. Figure to the right indicate full marks.
4. Illustrate your answers with sketches and flow chart wherever necessary.
5. Use of non-programmable electronic pocket calculator permitted.
6. Mobile and any other communication devices are not allowed in examination hall.
7. Assume suitable data wherever necessary.

Q1 Attempt any four of the following:
   a. What is the function of steam generator and enlist its basic components
   b. List the applications of diesel engine power plant.
   c. Briefly explain the working principle of Francis turbine
   d. Explain Fourier law of heat conduction in heat transfer
   e. Explain briefly the p-n junction diode characteristics.

Q2 What is heat exchanger? How heat exchangers are classified and explain any 4 types of heat Exchangers briefly.

Q3 (a) Briefly explain the concept of cavitation and priming in centrifugal pump.

   (b) Explain the Wien’s displacement law applied to radiation heat transfer

Q4 a. Define the different dimensionless parameters used in natural convection and explain their significance.
   b. Explain the working principle of D.C Generator

Q5 Explain the working principle of Pelton turbine and also draw the velocity Triangle associated with it.

Q6 a. what do you understand by:
   (i) Microprocessor
   (ii) Alternator
   (iii) Radiation shielding
   (iv) Ash handling system
   b. Briefly explain the working principle of centrifugal compressor.

Q7 a. What is the basic use of transformer? Give its constructional details
b. Explain the basic gates AND, OR and NOT gates with truth tables. 8

Q8  a. Briefly explain Kirchhoff's current law and voltage law. 8

b. Define steam turbine and differentiate between impulse and reaction steam turbine 8

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