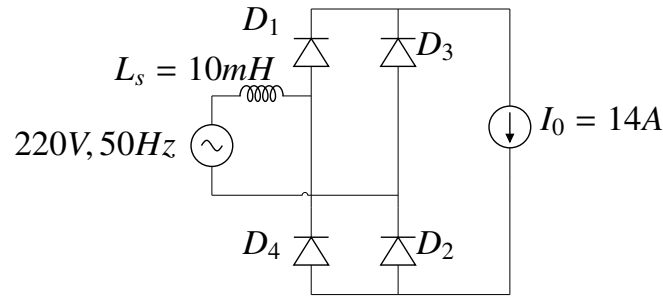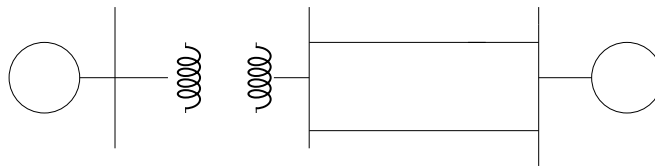# 2017-EE-53-65

EE24BTECH11001 - ADITYA TRIPATHY

1) The figre below shows an uncontrolled diode bridge rectifier supplied from $220V, 50Hz$ 1-phase *ac* source. The load draws a constant current $I_0 = 14A$. The conduction angle of the diode D_1 in degrees (rounded off to two decimal places) is $(2017 - EE)$

2) The positive, negative and zero sequence reactances of a wye-connected synchronous generator are $0.2pu, 0.2pu$ and $0.1pu$, respectively. The generator is on open circuit with terminal voltage of $1pu$. The minimum value of the inductive reactance, in pu, required to be connected between neutral and ground so that the fault current does not exceed $2.75pu$ is a single line to ground fault occurs at athe terminals is
(assume fault impedance to be zero). (Give the answer up to one decimal place)
$(2017 - EE)$

3) The figure shows the single line diagram of a apower system with a double circuit transmission line. The expression for electrical power is $1.5 \sin \delta$, where δ is the rotor angle. The system is operation at the stable equilibrium point with mechanical power equal to $1pu$. If one of the transmission line circuits is removed , the maximum value of δ, as the rotor swings is $P_{max} \sin \delta$, the value of P_{max}, in pu is
(Give the answer up to three decimal place)

$(2017 - EE)$

4) After Rajedra Chola returned from his voyage to Indonesia, he _____ to visit the temple in Thanjavur. $(2017 - EE)$

   a) was wishing   b) is wishing   c) wished   d) had wished

5) Research in the workplace reveals that people work for many reasons _____. $(2017 - EE)$

   a) money beside   b) beside money   c) money besides   d) besides money

6) Rahul, Muralu, Srinivas and Arul are seated around a square table. Rahul is sitting to the left of Murali, Srinivas is sitting to the right of Arul. Which of the following pairs are seated opposite each other ? $(2017 - EE)$

a) Rahul and Murali

b) Srininvas and Arul

c) Srinivas and Murali

d) Srinivas and Arul

7) Find the smallest number y such that $y \times 162$ is a perfect cube. $\hspace{1cm}$ $(2017 - EE)$

a) 24 $\hspace{2cm}$ b) 27 $\hspace{2cm}$ c) 32 $\hspace{2cm}$ d) 36

8) The probability that a k-digit number does NOT contain the digits 0, 5 or 9 is $\hspace{1cm}$ $(2017 - EE)$

a) 0.3^k $\hspace{1.5cm}$ b) 0.6^k $\hspace{1.5cm}$ c) 0.7^k $\hspace{1.5cm}$ d) 0.9^k

9) "The hold of the nationalist imagination on our colonial past is such that anything inadequately or improperly nationalist is just not history."
Which of the following statements best reflects the authos's opinion? $\hspace{1cm}$ $(2017 - EE)$
a) Nationalists are highly imaginative.
b) History is viewed through the filter of nationalism.
c) Our colonial past never happened.
d) Nationalism has to be both adequatley and properly imagined.

10) Six people are seated around a circular table. There are at least two men and two women. There are at least three right-handed persons. Every woman has a left-handed person to their immediate right. None of the women are right handed. The number of women at the table is $\hspace{1cm}$ $(2017 - EE)$

a) 2 $\hspace{2cm}$ b) 3 $\hspace{2cm}$ c) 4 $\hspace{2cm}$ d) Cannot be determined

11) The expression $\frac{(x+y-|x-y|)}{2}$ is equal to $\hspace{1cm}$ $(2017 - EE)$

a) The maximum of x and y

b) The minimum of x and y

c) 1

d) None of the above

12) Arun, Gulab, Neel and Shweta must choose one shirt each from a pile of four shirts coloured red, pink, blue and white respectively. Arun dislikes the colour red and Shweta dislikes the colour white. Gulab and Neel like all the colours. In how many different ways can they choose the shirts so that no one has a shirt with a colour he or she dislikes $\hspace{1cm}$ $(2017 - EE)$

a) 21 $\hspace{2cm}$ b) 18 $\hspace{2cm}$ c) 16 $\hspace{2cm}$ d) 14

13) A contour line joins locations having the smae height above the mean sea level. The following is a contour plot of a geographical region. Contour lines are shown at 25m intervals in this plot. If in a flood, the water rises to 525m, which of the villages P, Q, R, S, T get submerged? $\hspace{1cm}$ $(2017 - EE)$

a) P, Q $\hspace{2cm}$ b) P, Q, T $\hspace{2cm}$ c) R, S, T $\hspace{2cm}$ d) Q, R, S