**Government Polytechnic Chhapra**

**MODEL QUESTION PAPER ON ELECTRICAL POWER GENERATION**

**Subject Code - 2020301**

1)“If a high degree of speed control is required, d.c. is preferable to a.c. for an electric drive" -Justify.

2) What do you mean by Load Equalization?

3) Give the classification of electric heating methods.

4) Define: i) Mean spherical Candlepower, ii) Mean horizontal Candlepower.

5) Why a series motor is preferred for the electric traction.

6) What are the advantages of electric braking over mechanical braking

7) Discuss the advantages and disadvantages of electric drive over other drives.

8) A 200 V shunt motor has an armature resistance of 0.5 Ohm. It takes a current of 16 amps on full load and runs at 600 r.p.m. If a resistance of 0.5 ohm is placed in the armature circuit, find the ratio of the starting torque to the full load torque.

9) Explain in brief how heating is done in the following cases: i) Resistance heating, ii) Induction heating iii) Dielectric heating.

10) A 20KW single-Phase, 220V resistance oven employs circular nichrome wire for its heating element, if the wire temperature is not to exceed 12270 and the temperature of the charge is to be 4270C, calculate the size and length of the wire required. Assume emissivity = 0.9, radiating efficiency = 0.6 and specific resistance of wire = 1.09 X 10–6 Ω-m.

11) Explain the different measurement techniques used for luminous intensity.

12) A lamp fitted with 120 degrees angled cone reflector illuminates circular area of 200 metre in diameter. The illumination of the disc increases uniformly from 0.5 metre-candle at the edge to 2 metre-candle at the centre. Determine

i. the total light received

ii. Average illumination of the disc

iii. Average c.p. of the source.

13) Compare Tungsten filament lamp with Fluorescent tubes.

14) Explain the different types of lighting schemes.

15) Briefly explain the a.c. motors used in traction.

16) Explain various characteristics to be considered for selection of electric drive.

17) Explain about dielectric heating.

18) List out the properties of heating element.

19) What is the difference between plastic welding &fusion welding?

20) Define (i) waste light factor (ii) depreciation factor (iii) coefficient of utilization.

21) Define (i) Average speed, (ii) crest speed, (iii) scheduled speed.

22) Explain in detail the general consideration in selecting motor power ratings.

23) A motor fitted with a fly wheel that supplies a load of torque 500m for 33 sec. during no load period the fly wheel regains its original speed. The motor torque is required to be limited to 400n-m. The no load speed of the motor is 800 rpm and its full load slip is 10% determine the moment of inertia of the fly wheel.

24) Explain the principal of dielectric heating also write advantages and its applications.

25) Explain in detail about resistance and arc welding.

26) State and explain laws of illumination.

27) Define i) candle power ii) luminous intensity iii) illumination iv) luminous efficiency.

28) Two similar lamps having uniform intensity of 500 candle power in all directions below the horizontal are mounted at a height of 4 meters. What must be the maximum spacing between the lamps so that the illumination on the ground midway between the lamps shall be at least one half the illuminations directly under the lamps?

29) Describe the construction and working principal of (i) sodium vapour lamp ( ii) mercury vapour lamp.

30) What are the factors governing the selection of motors?

31) On what factors dielectric losses depend? 32) Define Illumination?

33) What is Lamp Efficiency?

34) What are the advantages of diesel electric traction.

35) Define the term braking retardation.

36) What are the advantages of equipment operated from high frequency supply?

37) What is the advantage of constant current supply system?

38) Where would you recommend slip coupling method of speed control?

39) What is welding?

40) Describe the construction and principle of working of an induction furnace.

41) What type of electric supply is suitable for electric arc welding?

42) Explain how emitted energy is distributed using spectral distribution curves .

43) Explain the functionality of a Lux Meter?

44) Why tungsten is selected as filament material and on what factors its life depend?

45) What are the advantages of fluorescent lighting over plain mercury lighting?

46) Write the requirements of fraction motors .

47) Compare fluoresecent and filament lamps on basis of quality of light, capital and running costs.

48) What are the advantages of coiled coil filament gas filled lamp?

49) What are various sources of light? Write short notes on filament lamps.

50) Write a brief note on LED lighting.