

Student Name: _____

Reg. No. _____

MGT211 Principles of Management
Mid Term Exam (Fall 2020, Session 2017)

- Start solution of every new question on a new page.
- All the related parts of a question must be solved together.
- No typo in the paper, understanding the question is part of examination.

Time Allowed: 60 Minute
Total Marks: 30

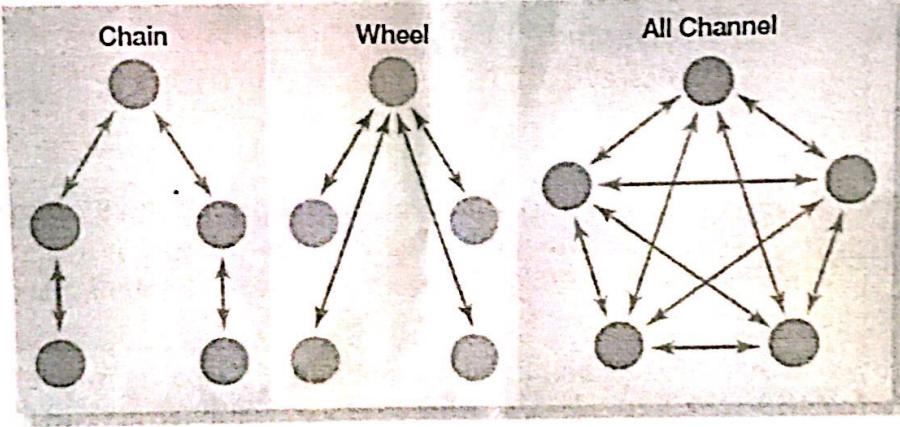
Q.1(a)	Define <i>organization culture</i> . Also make comparison between strong and weak culture.	10
Q.1(b)	Discuss in detail the eight steps of <i>decision making process</i> .	10
Q.1(c)	Describe in detail the six key elements in <i>organization design</i> .	10

Good Luck

MGT211 Principles of Management
Final Term Exam (Fall 2020, Session 2017)

- Start solution of every new question on a new page.
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Time Allowed: 90 Min
Total Marks: 40

Q.1(a)	Define the “selection process” in human resource management and also enlist all the tools involved in selection procedure.	10
Q.1(b)	The figure shows various “Organizational Communication Networks”. Make a comparison between them based on the criteria of speed, accuracy, emergence of leader and member satisfaction.	10
Q.1(c)	 <p>Define Motivation, Also make a comparison between Equity and Expectancy theory of motivation.</p>	10
Q.1(d)	Define Leadership and discuss your opinion in detail about “ <u>Gender and Leadership</u> ”	10

Good Luck

Islamic and Pak Studies -201

7th Semester, Session 2017
Mid-Term Exams fall 2020

Time: 60 Min.

- All the related parts of a question must be solved together.

Islamic Studies

Q.1	Define Ijaz ul Quran and write a note on scientific miracle of Quran اعجاز	06	PLO8 CLO1
Q.2	Translate the following verse and write note on Hazrat Luqman's advises and its role in character building. يَا بُنَيَّ أقِمِ الصَّلَاةَ وَأْمُرْ بِالْمَعْرُوفِ وَانْهِ عَنِ الْمُنْكَرِ وَاصْبِرْ عَلَىٰ مَا أَصَابَكَ إِنَّ ذَلِكَ مِنْ عِزْمِ الْأُمُورِ (17)	06	PLO8 CLO2
Q.3	Translate the following Hadith and right note about Manners of salam and greeting Muslims and non-Muslims. وعن أبي هريرة - رضي الله عنه - قال: قاتل رسول الله - عليه السلام: «ليسلم الصغير على الكبير، والمناوش على القاعد، والقليل على الكبير». وفي رواية لمسندي: والراكيث على المنشي	06	PLO8 CLO2

Pakistan Studies

Q.4	Write role of women in Pakistan movement.	06	PLO 12 CLO3
Q.5	Write comprehensive note on China Pakistan economic corridor (CPEC).	06	PPO12 CLO3

Student Name:

Islamic and Pak Studies -201

7th Semester Session 2017

End-Term Exams

Time: 90 Min.

- > All the related parts of a question must be solved together.

Islamic Studies

Q.1 Explain Islamic criminal law about Murder		08	PLO8	CLO2
Q.2 Translate the following Hadith and write note on Human rights in the light of last sermon of Holy prophet ﷺ	عن أبي هريرة - رضي الله عنه - قال: قال رسول الله ﷺ من أحب أن يُنسَطَ عَلَيْهِ فِي رِزْقِهِ، وَأَن يُشَتَّأْ لَهُ فِي أَثْرِهِ، فَلَيُصْلِنَ رَحْمَةً (أَخْرَجَهُ الْبَخْرَارِيُّ) ..	08	PLO8	CLO2
Q.3 Translate the verse and note about the rules of privacy in Islam.	يَا أَيُّهَا الَّذِينَ آتَيْنَا لَا تَدْخُلُوا بَيْوَنًا غَيْرَ مَسْكُونَةٍ حَتَّىٰ تَسْأَبِسُوا وَتَسْلِمُوا عَلَىٰ أَهْلِهَا ذَلِكُمْ خَيْرٌ لَّكُمْ لَعَلَّكُمْ تَذَكَّرُونَ (27) فَإِنْ تَعْدُوا فِيهَا أَحَدًا فَلَا تَدْخُلُوهَا حَتَّىٰ يُؤْذَنَ لَكُمْ وَإِنْ قِيلَ لَكُمْ أَرْجِعُوهَا هُوَ أَرْجِعِي لَكُمْ وَاللَّهُ عَلَيْهِ مَا تَعْمَلُونَ عَلَيْهِمْ (28) لَيْسَ عَلَيْكُمْ جُنَاحٌ أَنْ تَدْخُلُوا بَيْوَنًا غَيْرَ مَسْكُونَةٍ فِيهَا مَنَاجِعٌ لَّكُمْ وَاللَّهُ يَعْلَمُ مَا تَبْدِيُونَ وَمَا تَكْثُرُونَ (النور 29)	08	PLO8	CLO2

Pakistan Studies

Q.4 Write Pakistan and Iran relations.		08	PLO 12	CLO3
Q.5 Write comprehensive note on Organization of Islamic cooperation.		08	PPO12	CLO3

EE454 Power System Protection
Mid Term Exam (2 Feb. 2020, Session 2017)

Time Allowed: 60 Minutes
Total Marks: 30

- Start solution of every new question on a new page.
- All the related parts of a question must be solved together.
- Suggested time division - Q2 -10mins, Q3 - 10mins, Q4 - 5mins, Q1 - 35mins + any extra time given by examiner.

Q.1
CEP

A portion of a three phase radial power system is shown in the figure. Buses A and B both are equipped with CTs and inverse time over-current relays - one for each phase as shown. A three phase circuit breaker trips all phases upon occurrence of any fault. The load current and fault current data for the system is provided in Table I.

Evaluate the pick-up as well as time dial settings of relays at bus A and bus B to ensure coordination between them while also evaluating appropriate CT ratios (choose from standard CT ratios table provided). Use the provided relay characteristic graphs in your evaluation

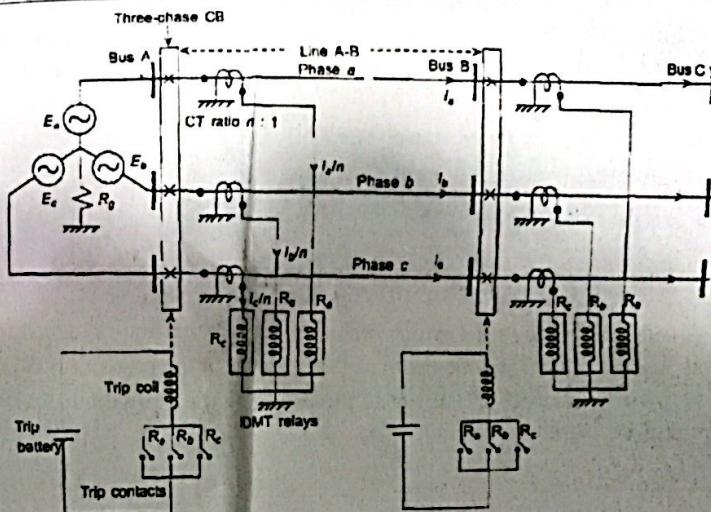


Table I – All current values are in amperes

	Bus A	Bus B	Bus C
Max. Load	Same as Bus C.	Same as Bus C.	105A
Min. Fault	900	800	700
Max. Fault	1600	1300	1000

for relays at both buses. Assume that the available relay taps (for all relays) are 4, 6, 9, 11 and 13 Amperes.

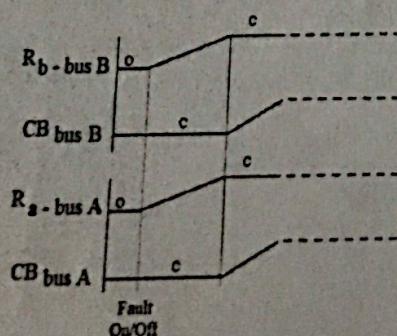
Furthermore, note that the relays at bus B have to coordinate with downstream relays (not shown in the figure) and therefore time dials $\frac{1}{2}$ and 1 cannot be chosen for relays at bus B. You are free to select from any of the higher time dials for these relays.

Finally, for a three phase fault at bus C, sketch timing diagrams for phase 'b' relay at bus B, CB at bus B, phase 'a' relay at bus A and the CB at bus A. A sample diagram is being provided here for your convenience.

Sketch two such diagrams –

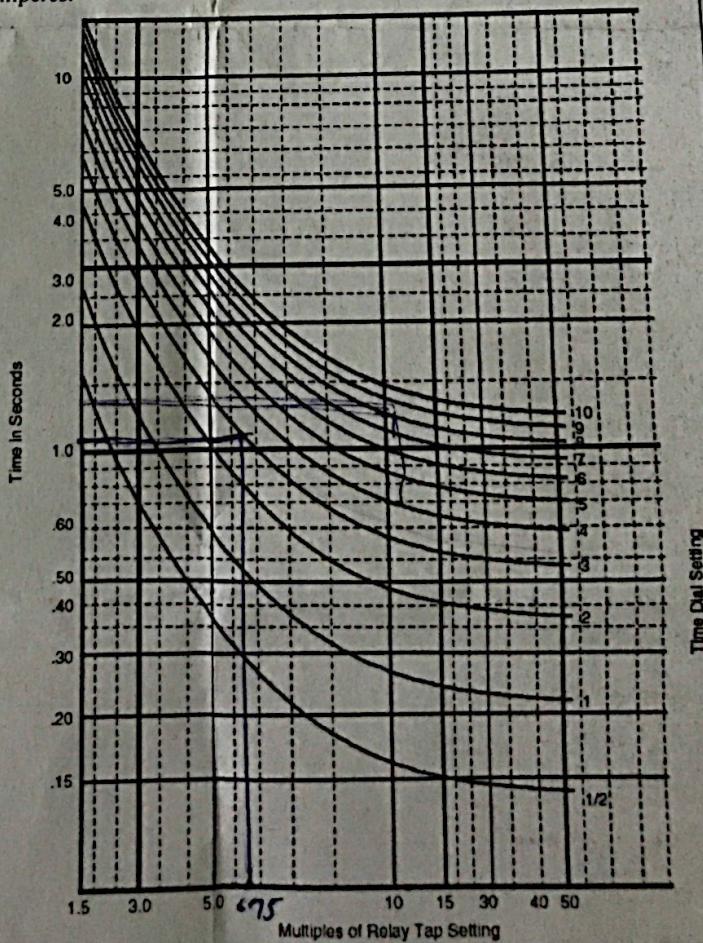
Case 1. Fault cleared by bus B relays
Case 2. Bus B breaker failed to open, hence fault cleared by bus A relays.

Mention relay over-travel in the timing diagram(s), if/where applicable.



600 : 5 MR	1200 : 5 MR	2000 : 5 MR	3000 : 5 MR
50 : 5	100 : 5	300 : 5	300 : 5
100 : 5	200 : 5	400 : 5	500 : 5
150 : 5	300 : 5	500 : 5	800 : 5
200 : 5	400 : 5	800 : 5	1000 : 5
250 : 5	500 : 5	1100 : 5	1200 : 5
300 : 5	600 : 5	1200 : 5	1500 : 5
400 : 5	800 : 5	1500 : 5	2000 : 5
450 : 5	900 : 5	1600 : 5	2200 : 5
500 : 5	1000 : 5	2000 : 5	2500 : 5
600 : 5	1200 : 5	3000 : 5	

14 CLO3



Q.2	<p>Explain the following basic principles related to the field of Power System Protection briefly (four – five lines of text are sufficient):</p> <ul style="list-style-type: none">a. Local Backup Relyingb. Dependability of a Protection Systemc. Magnitude comparison in fault detection <p>Any relevant figures/graphs may be sketched.</p>	6	CLO1
Q.3	<p>The name-plate turns ratio of a Current Transformer is 200:5, its leakage impedance is $(0.02 + j0.15)\Omega$ and its magnetizing impedance may be taken as $(3 + j10) \Omega$. In the protection system where the CT is connected, it is driving a load of $j1.5 \Omega$. Demonstrate the use of 'Ratio Correction Factor' for calculating the effective turns ratio of this current transformer.</p>	6	CLO2
Q.4	<p>The name plate turns ratio of a Voltage Transformer is 138,000/120 and three such transformers are connected in $\Delta-\Delta$ configuration. The primary system voltage is 138kV, VT leakage impedance is $(2 + j6) \Omega$. In the protection system where the VT is connected, it is driving a load of 60Ω which is also connected in delta. Demonstrate the use of 'Ratio Correction Factor' for calculating the effective turns ratio of this voltage transformer.</p>	4	

EE454 Power System Protection

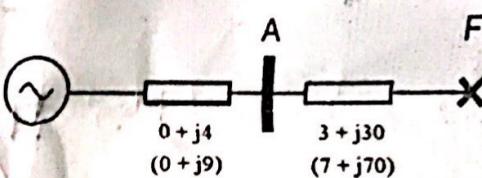
Final Exam (18 Feb. 2021, Session 2017)

Time Allowed: 90 Minutes

Total Marks: 40

- Start solution of every new question on a new page.
- All the related parts of a question must be solved together.

Q.1 A simplified sketch of a portion of a three phase power system is shown in the figure. A complete set of distance relays is located at bus A for fault protection of the line starting from bus A. When a single line to ground fault occurs on phase 'a' of the line. The positive, negative and zero sequence impedances of the line from source to bus A, and from bus A to the fault point are given in the figure (positive and negative sequence impedances are equal while zero sequence impedance values are in parenthesis). The system source voltage is 11kV. Justify that the impedance seen by the ground distance relay is the correct positive sequence impedance from its location to the fault point.



10

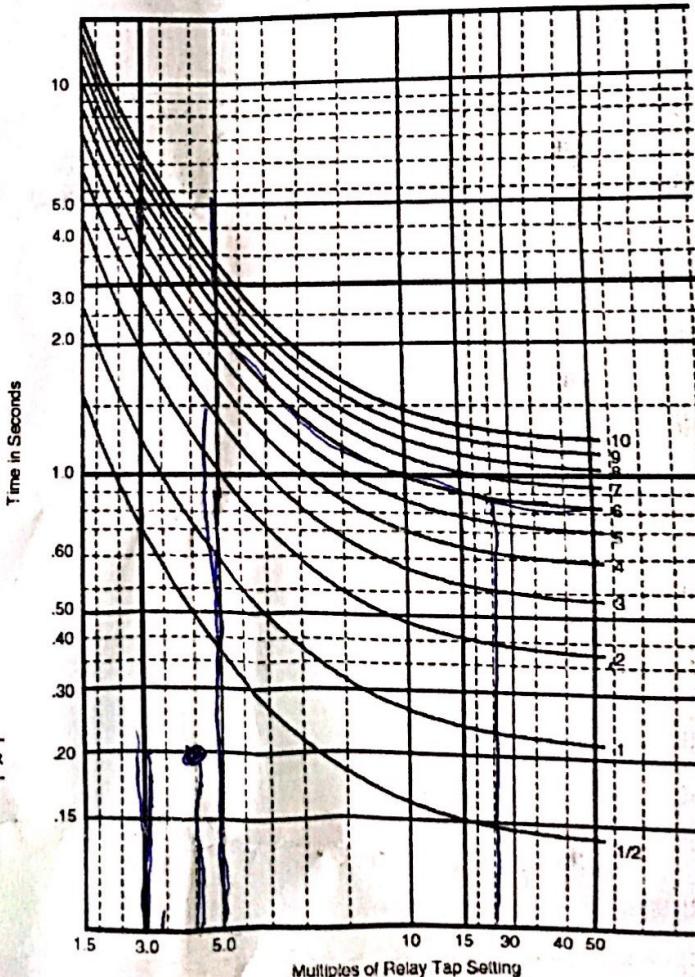
CLO3

Q.2 With the help of RX plane diagrams, assess the impact of the following power system compensation devices upon the setting of distance relays:

- Series Capacitors
- Series Inductors

6

Q.3 Develop an elaborate and appropriate electrical protection scheme for a three phase 1000hp induction motor connected to a 3.7kV bus. The full load current drawn by the motor is 225 amperes, whereas its locked rotor current is 1200 amperes. Take the starting time of the machine to be equal to 0.9 seconds and assume that the full locked rotor current flows in this interval.



14

CLO4

Standard current transformer multiplication			
600 : 5 MR	1200 : 5 MR	2000 : 5 MR	3000 : 5 MR
50 : 5	100 : 5	300 : 5	300 : 5
100 : 5	200 : 5	400 : 5	500 : 5
150 : 5	300 : 5	500 : 5	800 : 5
200 : 5	400 : 5	800 : 5	1000 : 5
250 : 5	500 : 5	1100 : 5	1200 : 5
300 : 5	600 : 5	1200 : 5	1500 : 5
400 : 5	800 : 5	1500 : 5	2000 : 5
500 : 5	900 : 5	1600 : 5	2200 : 5
600 : 5	1000 : 5	2000 : 5	2500 : 5
600 : 5	1200 : 5	3000 : 5	

Q.4 A single-phase transformer is rated at 66/132 kV, 10 MVA. The transformer has an under load tap changer (ULTC) with a turns ratio of -5% to +5%. Develop a complete protection scheme based upon differential relaying for this transformer.

10

Assume available input taps for the differential relay to be: 3.0, 4.0, 4.5, 4.8, 4.9, 5.0, 5.1, 5.2, 5.5 A secondary and assume that the available slopes are 10, 20 and 40 %. Choose from standard CT ratios.

EE456 Smart Grid

Fall 2020, Session 2017 (07th Semester)

Mid-Term Exams

11-04-2021

Time Allowed: 60 Minutes
Total Marks: 30

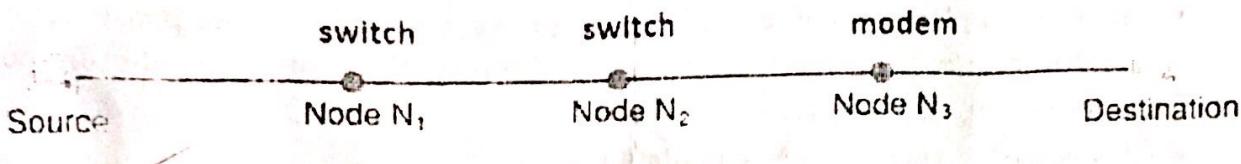
- All the related parts of a question must be solved together.
➤ Start solution of every new part on a new page.

A

62 + 5 = 67

05

- A Describe the layers in given communication network and also protocols while browsing the google from host computer?



(a) Network Topology

CLO1

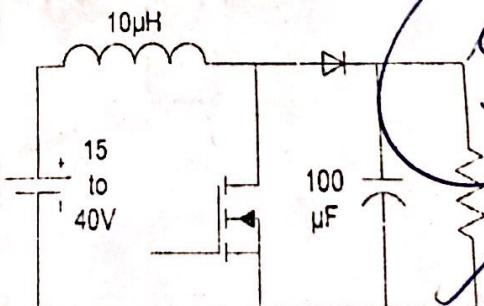
- B Describe in possible communication network of Smart Grid which subnetwork will be used in home, Distribution network and central generation systems? Discuss and shortly explain one communication technology in these subnetworks?

05

2 A

06

The boost converter shown in attached figure has input ranging from 15 to 40V and powers a fixed load of 1kW at 100Vdc. While operating in CCM, the inductor current ripple is to be kept below $\pm 25\%$ under all input voltage conditions.



CLO3

1. Determine and compare the min switching frequency for the component values shown.

- B A PV array is connected with boost converter whose output is 500 V. The solar irradiance decreased from 4 to 6 seconds. What will be output of boost converter from 1 to 10 seconds if by decreasing the solar irradiance cause the decrease in output of boost converter only 10 % while output in remaining duration remain constant. Draw and outline the output voltage of boost converter having no PI controller and with PI controller from 1 to 10 sec?

04

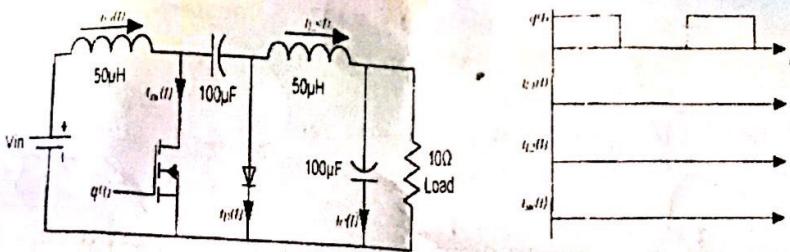
Student Name:

Reg. No.

Q.2 C

For the Cuk converter shown, below, draw and Analyze the currents i_{L1} , i_{L2} and i_{sw} in timing relation with the switching function of the transistor

03



- In three phase inverter you are to synthesize a three-phase voltage vector $v_{abc} = [200 \quad 73 \quad -273.25]^t$. Convert this voltage in d-q frame of reference v_x and analyze it.
- Using space vector PWM calculate t_a , t_b and t_o .
- Assume the switching interval is 100 μs. exactly identify the inverter states corresponding to those computed time intervals by drawing the inverter switch states corresponding time interval T_0 , T_1 and T_2 .

07

$$I_a = U \left[\cos \alpha - \frac{1}{\sqrt{3}} \sin \alpha \right]$$

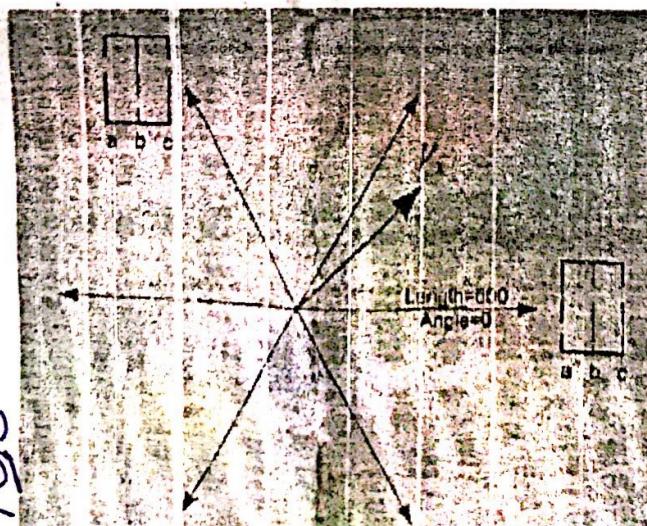
$$I_b = \frac{2}{\sqrt{3}} \cdot U \cdot \sin \alpha$$

$$V_a = \frac{2}{\sqrt{3}} \cdot V_x \cdot \sin \left(\frac{\pi}{3} - \alpha \right)$$

$$V_b = \frac{2}{\sqrt{3}} \cdot V_x \cdot \sin \alpha$$

$$T_{abc-dq} = \sqrt{\frac{2}{3}} \begin{bmatrix} 1 & -\frac{1}{2} & -\frac{1}{2} \\ 0 & \frac{\sqrt{3}}{2} & -\frac{\sqrt{3}}{2} \end{bmatrix}$$

CLO2



100

Student Name: _____

Reg. No. _____

EE456 Smart Grid
Fall 2020, Session 2017 (07th Semester)
Final-Term Exams

Time Allowed: 90 Minutes
Total Marks: 40

- All the related parts of a question must be solved together.
- Answer should be to the point. Start solution of every new part on a new page.

Q.1	<p>A The below diagram shows the distribution system when fault occurs between line 5 and line 4? When system is fully automated draw block diagram with automation and outline four points how system will respond?</p>	06
B	<p>Consider the circuit shown in Figure below. The 33/11 kV transformer has an on-load tap changer which maintains the load voltage at 11 kV. Calculate the percentage reduction in energy loss in the 33 kV line if load shifting shown in Figure below is managed. Ignore the 33/11 kV transformer losses?</p>	08

CLO2

C	Draw the control diagram of Grid Tie inverter? Outline the value of I_d and I_q for unity power factor and .8 power factor?	06
Q.2 A	Draw the block diagram of type 3 and type 4 wind turbine? Outline for which type generator turbine the type 3 and type 4 are used? Compare which type from type 3 and type 4 is less complex for controlling the active and reactive power when integrated with utility grid? (answer within 2 to 3 lines) When DFIG is integrated with utility grid from where it takes reactive power? (answer within 2 to 3 lines)	08
B	Maximum value of Power Coefficient of Wind turbine CP is $16/27$ when $a=1/3$. What will be variation when $a = 1/4$ and $a = 1/5$ just analyze it?	03
C	<p>In the below diagram of hybrid microgrid 5Kw solar system and 5 Kw wind turbine is integrated with utility grid and load is 10 KW under normal conditions? Draw the waveform of</p> <ul style="list-style-type: none"> • active and reactive power of microgrid • active and reactive power of utility grid <p>Draw waveform duration is 1 to 10 sec while system is operating at unity power factor in grid tie mode.</p>	09

Case 1: Wind operating at maximum efficiency, PV radiation decrease from 3 to 5 sec causes the decrease of Solar system power from 5KW to 2 KW while load remain constant at 12 KW (1 to 10)?

Case 2: Load set at 15 KW in duration 1 to 10 sec while wind and solar operating at maximum efficiency?

Case 3: Load set at 5 KW in duration 1 to 10 sec while solar operating at maximum efficiency and output power of wind turbine decreases from 5KW to 2 KW in duration 3 to 5 sec?

CLOS