AR16

CODE: 16CE2006 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

II B.Tech I Semester Supplementary Examinations, January-2019

ENGINEERING GEOLOGY

(Civil Engineering)

Time: 3 Hours **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1. a Define physical Geology.
   b Describe the scope of Physical Geology

(OR)

2. Explain the similarities and differences in Physical Properties, Chemicals composition and uses of
   a) Muscovite Mica and Biotite Mica b) Quartz and Feldspar c) Haematite and Magnetite

UNIT-II

3. a How sedimentary rocks are formed?
   b Describe the various textures of metamorphic rocks.

(OR)

4. a What is Metamorphism? What are the agents of Metamorphism?
   b Describe the various structures and textures of sedimentary rocks.

UNIT-III

5. a With a neat sketch describe the different components of a Fault.
   b With neat figures describe
   i) Recumbent fold ii) Fan fold iii) Parasitic fold

(OR)

6. a Describe the terms
   i) Crest ii) Trough iii) Limb iv) Plunge v) Axial Plane of a fold.
   b Describe the impacts of Faults.

UNIT-IV

7. a Which is the ideal site for dam construction? Explain.
   b Describe the factors contributing to the long life of a reservoir created after dam construction.

(OR)

8. a How do you classify Tunnels? Explain.
   b Describe
   i) Over break ii) Lining of Tunnels.

UNIT-V

9. a Describe in detail the Electro Magnetic Induction method of Geophysical investigations.
   b What are the relative advantages and Limitations of the Electro Magnetic Induction Method.

(OR)

10. a What are seismic methods of Geophysical Investigations?
    b Mention the advantages and limitations of seismic method.

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AR16

CODE: 16EE2009 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
II B.Tech I Semester Supplementary Examinations, January-2019

POWER SYSTEMS-I
(Electrical and Electronics Engineering)

Time: 3 Hours **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1. a) Explain the working of Thermal power station with a neat layout diagram. 10M
   b) List the advantages of pulverized fuel firing in thermal power station. 4M

(OR)

2. a) Explain the ash handling system in thermal plants. 8M
   b) Explain about pumped storage hydel plants with neat diagram 6M

UNIT-II

3. a) Draw and explain the single line diagram of solar energy storage system 7M
   b) Explain the working principle of gas power station with block diagram 7M

(OR)

4. a) Explain the radiation hazards and shielding in nuclear power plants. 6M
   b) With the help of a neat diagram explain the working principle of a fast breeder reactor used in a nuclear power plant. 8M

UNIT-III

5. a) List out the comparisons between comparison of DC and AC distribution 6M
   b) A DC ring main ABCDA is fed from point A with 230 V supply and the loop resistances of various sections are AB = 0.04 ohms; BC = 0.35 ohms; CD = 0.5 ohms and DA = 0.05 ohms. The main supplies 100 A at B, 150A at C and 200 A at D. Calculate the voltages at each load point. If the points A and C are inter connected through a link of 0.05 ohm. 8M

(OR)

6. a) Explain about the 33/11 kV substation showing the location of all the substation equipments. 8M
   b) State the advantages of Outdoor substations over indoor substations 6M

UNIT-IV

7. a) Discuss the effect of load factor and diversity factor on the cost of generation in a power systems 7M
   b) A generating station has a maximum demand of 550MW. The annual load factor is 45% and the capacity factor is 40 %. Find the reserve capacity of the plant 7M

(OR)

8. a) What are the various types of tariffs? Explain the power factor tariff. 7M
   b) A consumer has a maximum demand of 200KW, maintain load factor of 40%. The tariff rates are Rs 100 per KW of maximum demand plus 10 paisa per Kwh, Find (i) total energy consumed per annum (ii) The annual electricity bill. 7M

UNIT-V

9. a) Deduce an expression for insulation resistance of a single core cable in terms of specific resistance of dielectric, its core and sheath diameter. 7M
   b) The insulation resistance of a single core cable is 459 Mega ohm per km. if the core diameter is 3.0 cm and resistivity of insulation is $4.5*10^{14}$ ohm-cm, find the insulation thickness. 7M

(OR)

10. a) What are different types of gas insulated substations? Explain merits and demerits of each one 8M
    b) Explain the constructional features of gas insulated substations. 6M

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AR 16

CODE : 16ME 2009 **SET 1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
II B.Tech I Semester Supplementary Examinations, January, 2019

ADVANCED ENGINEERING DRAWING
(Mechanical Engineering)

Time : 3 Hours **Max.Marks : 70**

Answer ONE Question from each Unit.
All Questions carry equal marks.
All parts of the question must be answered at one place.

UNIT-I

1. A Hexagonal Pyramid base 25 mm and axis 55 mm long has one of its slant edges on the ground. A Plane containing that edge and the axis is perpendicular to H.P. and inclined at 45^0 to the V.P. Draw its projections using auxiliary method .The apex is nearer V.P. than base.

(OR)

2. A Pentagonal prism is resting on one of the corners of its base on the H.P. The longer edge containing that corner is inclined at 45^0 to the H.P. The axis of the prism makes an angle of 30^0 to the V.P. Draw the projections of the solid using auxiliary method. Take side of base 40 mm and height of axis 70 mm.

UNIT-II

3. A Hexagonal Prism base 30 mm side and axis 70 mm height is resting in the H.P. with two edges of base perpendicular to the V.P. It is cut by a section plane, inclined at 45^0 to the H.P. and bisecting the axis. Draw the Front view, Sectional top view and true shape of the section.

(OR)

4. A Square pyramid base 40mm and axis 65 mm height is resting in the H.P. with all edges of the base equally inclined to the V.P. It is cut by a section plane, inclined at 45^0 to the H.P. and passing through midpoint of the axis. Draw the Front view, sectional top view, sectional side view and true shape of the section.

CODE : 16ME 2009 **SET 1**

UNIT-III

5. A Cylinder base 40 mm diameter and axis 60 mm long is resting in the H.P. with its axis vertical It is cut by a section plane, inclined at 45^0 to the H.P. and bisecting the axis. Draw the front view, Sectional Top view , Sectional Side view and true shape of the section.

(OR)

6. A Cone base 60 mm diameteter and axis 80 mm long is resting in the H.P. with its axis vertical. It is cut by a section plane, inclined at 30^0 to the H.P. and passing through the axis 30 mm below the apex. Draw the front view, Sectional Top view and true shape of the section.

UNIT-IV

7. A Triangular prism, base 40 mm side and axis 65 mm height is resting in the H.P. with its axis vertical. It is cut by a section plane, inclined at 45^0 with bottom base and passing though the extreme left end. Draw the development for the lateral surface of the solid.

(OR)

8. A cylinder base 50 mm diameter and axis 70 mm height is resting in the H.P. with its axis vertical. It is cut by a section plane inclined 45^0 downwards from extreme left of top base. Draw the development of the truncated cylinder using parallel Line method.

UNIT-V

9. A Vertical Square prism , base 50 mm side is completely penetrated by a horizontal square Prism base 35 mm side so that their axes intersect. Axis of horizontal prism is parallel to V.P. The faces of both prisms are equally inclined to V.P. Draw the projections of the solids showing lines of intersection, assuming suitable dimensions for the axis of both the prisms.

(OR)

10. A vertical cylinder base 80 mm diameter is completely penetrated by another cylinder 60 mm diameter, with their axes bisecting each other at right angles. Draw the projections, showing curves of intersection assuming the axis of penetrating cylinder to be parallel to the V.P.

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AR16

CODE: 16EE2006 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
II B.Tech I Semester Supplementary Examinations, January, 2019

ELECTRICAL TECHNOLOGY
(Electronics and Communication Engineering)

Time: 3 Hours **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1. a) Explain principle of operation and derive the emf equation of a dc generator. 7M
   b) A 120V, dc shunt motor has an armature resistance of 0.2 ohms. It runs at 1800rpm taking a full load current of 40A. Find the speed on half load condition. 7M

(OR)

2. a) Draw different types of characteristics of a DC shunt motor and explain. 7M
   b) A dc series generator has armature resistance of 0.5 ohms and series field resistance of 0.03 ohms. It drives a load of 50A. If it has 6 turns/coil and total 540 coils on the armature and is driven at 1500rpm, calculate the terminal voltage at the load. Assume 4 poles, lap type winding, flux per pole as 2mWb and total brush drop as 2V. 7M

UNIT-II

3. a) Draw and explain the phasor diagram of a transformer at no-load and lagging load condition? 7M
   b) A 200 kVA single phase transformer when working at full load unity power factor has an efficiency of 90% and 92% efficiency when working at half load 0.8 pf. Find the iron loss and copper loss. 7M

(OR)

4. a) Explain the open circuit and short circuit test on a single phase transformer with neat circuit diagrams. 9M
   b) The no load current of a transformer is 10A at a pf of 0.25 lagging, when connected to 400V, 50Hz supply. Calculate (i) Magnetising component of no load current. (ii) Working component of no load current. (iii) Maximum value of flux in core. Assume primary winding turns as 500. 5M

UNIT-III

5. a) A 3 – phase, 6-pole, 50 Hz induction motor has a slip of 1% at no – load and 3% at full load. Find: i) Synchronous Speed ii) No-Load speed iii) Full- load speed iv) Frequency of rotor current at stand still. 7M
   b) Explain the torque slip characteristics with a neat diagram. 7M

(OR)

6. a) Describe construction and principle of operation of 3-phase squirrel cage induction motor. 7M
   b) Explain the difference between slipRing and squirrel cage Induction motor. 7M

UNIT-IV

7. a) Explain the construction and working principle of a synchronous generator. 6M
   b) Explain how regulation is determined by synchronous impedance methods on a synchronous machine. 8M

(OR)

8. a) A three phase alternator has the following data : No.of slots=192, conductors/slot=8, coil span=160 electrical degrees; speed of the alternator=375 rpm. Flux per pole=55 mwb. Calculate the phase and line voltage. 7M
   b) Write the types of an alternator and explain them in constructional aspect with neat diagrams. 7M

UNIT-V

9. a) Describe the following in case of measuring instruments (i) Deflecting torque (ii) Controlling torque (iii) Damping torque. 7M
   b) Compare merits and demerits of moving coil and moving iron instruments. 7M

(OR)

10. a) Explain the construction and working of a PMMC instrument. 7M
    b) Explain the controlling torque in measuring instruments. 7M

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AR16

CODE: 16CS2005 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

II B.Tech I Semester Regular Examinations, October, 2017

FREE OPEN SOURCE SOFTWARE

(Computer Science & Engineering)

Time: 3 Hours **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the Question must be answered at one place

UNIT-I

1.	a)	Explain in detail about the various operators in python with suitable examples.	[7M]
	b)	Explain how to write and execute a program in python illustrate the steps for writing a python program to check whether the number is palindrome or not.	[7M]

(OR)

2.	a)	Demonstrate the various expressions in python with suitable examples.	[6M]
	b)	The type () built-in function takes any Python object and returns its type. Try running it on dir by entering type (dir) into the interpreter. What do you get?	[8M]

UNIT-II

3.	a)	Write a python program to find the sum of N natural numbers.	[8M]
	b)	Explain the syntax and flow chart of the following loop statements (i) for loop (ii) while loop	[6M]

(OR)

4.	a)	Develop a python program to find the largest among three numbers	[6M]
	b)	Explain the significance of xrange() function in for loop with a help of a program	[8M]

UNIT-III

5.	a)	What is python List ?Describe the List usage with suitable examples	[7M]
	b)	Write a program to illustrate the heterogeneous list.	[7M]

(OR)

6.	a)	Explain in detail about (i) Creating a dictionary (ii) Accessing values in a dictionary (iii) Updating dictionary (iv) Deleting elements from dictionary	[8M]
	b)	Write a program to find n number from list using file handling	[6M]

UNIT-IV

7.	a)	What is a cookie? Discuss how they are created and used in Perl CGI programs	[7M]
	b)	What are the fundamental ways in which hashes differ from arrays in Perl?	[7M]

(OR)

8.	a)	Explain the data manipulation functionalities provided by Perl	[8M]
	b)	Explain File handling in Perl	[6M]

UNIT-V

9.	a)	Explain with an example module built-in functions?	[6M]
	b)	What are the differences between using "importing" and "loading"?	[8M]

(OR)

10.	a)	Explain in detail about multiline import?	[7M]
	b)	Measure to read random numbers upto 75 and display even and odd numbers with two different files.	[7M]

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