

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) Describe briefly about Samuel's character in Swami's perception with 5M
reference to the lesson.
- b) Provide at least two synonyms for each of the following words. 5x1=5
i. Admonish ii. Immaculate iii. Conspicuous iv. Hypocrisy v.
Novice

(OR)

2. a) What excuses were given by Swami to his father regarding his 5M
unwillingness to go to school? Do you agree with his reasoning?
- b) Write one-word substitutes for the following expressions. 5x1=5
i . One who can use either hand with ease
ii. Someone who leaves one country to settle in another
iii. A person who speaks more than one language
iv. A form of government in which power is held by the nobility
v. Someone who attacks cherished ideas or traditional institutions

UNIT-II

3. a) Describe the instances which have contributed in shaping and honing 5M
skills in Abdul Kalam when he was young.
- b) Fill in the blanks with appropriate verb forms. 5x1=5
i. This duplex house ----- to the Minister.(belong)
ii. The hockey team ----- for Mumbai yesterday.(leave)
iii. It is high time we ----- our project. (finish)
iv. In the class, the children -----lunch. (have)
v. Seema ----- ever since she came to Coorg. (paint).

(OR)

4. a) Who were the teachers who have left a lasting impression on Kalam? 5M
Illustrate with examples given in the narration.
- b) Fill in the blanks with appropriate verb forms. 5x1=5
i. When we were -----Ravi's house, we thought we'd see
him.(passing/passed)
ii. By the time I -----up the phone, they had rung up. (picking/
picked)
iii. I -----the discussions with great interest.(have been
following/have followed)
iv. She ----- the book since she was in her twenties. (has been
writing/had written)
v. During the previous week, I----- to the gym every evening. (
had been/went)

UNIT-III

5. a) What does the author, Robert Frost mean when he says “ I took the one less traveled by, And that has made all the difference”. 5M
- b) Rewrite / Convert the following as directed. 5x1=5
- I. Mahesh said, “I will go to Agra next week.” (into Indirect Speech)
 - II. Meera wanted to know if she might go out. (into Direct Speech)
 - III. A dead lion does not roar (Change it into complex sentence.)
 - IV. Some girls are cleverer than Seema. (into Superlative Degree)
 - V. The warrior was wounded but not killed. (Use.....although)

(OR)

6. a) What do the two roads signify in the passage? Was the author satisfied with his decision? Which road would you choose? 5M
- b) Rewrite / Convert the following as directed 5x1=5
- I. My brother asked, “Do you like horror movies?” (into Indirect Speech)
 - II. The man shouted whether he had no sense. (into Direct Speech)
 - III. The moment *which is lost* is lost forever. (Change it into simple sentence.)
 - IV. The moon shines brighter than the stars. (into positive Degree)
 - V. We must not be late, or we will be punished. (Use.....in the event of)

UNIT-IV

7. a) What were the six rules suggested by the author to improve language? Do you think these will help in making language simpler and easier to understand? 5M
- b) Punctuate the below extract. 5M
- as you must be aware m s kumar our consultancy has been tasked with streamlining the functional processes in the bank To do this effectively we need feedback and information from the employees of the bank which is why I am interviewing you today. sunil sharma is the documentation development manager at Cerner Corporation one of the world’s largest medical software developers. when asked what is most important job is as a documentation developer, Sunil says capturing the user giving the user a reason to come to our site

(OR)

8. a) Describe briefly the author, George Orwell’s observations on ‘Dying Metaphors’. Analyse his point of view. 5M
- b) Fill in the blanks of the below passage with appropriate prepositions. 5x1=5
- I. She held her diamond ----her thumb and her finger.
 - II. They walked ----the footpath until they came to a small hill.
 - III. He slept with his wallet ----his pillow.
 - IV. Raghu is content ----- what he has.
 - V. The doctor cured him -----the disease.

UNIT-V

9. a) What social issue was dealt in the drama *Mother's Day* ? Explain how Mrs, Pearson solves the problem. 5M
- b) Draft a letter of complaint to the Manager of the South Central Railway about a stolen luggage, while you were travelling by train. 5M

(OR)

10. a) Analyse the characters of Mrs, Pearson and Mrs. Fitzgerald, as portrayed by J.B. Priestley and their efforts to bring back 'the mother's' identity. 5M
- b) Draft an Email to the SBI Bank Manager informing him about your transfer to Delhi and requesting him to transfer your account to Delhi Branch. 5M

UNIT-VI

11. a) What was the main aim of the Chipko Movement? Describe the efforts of people behind it. 5M
- b) Read the following passage carefully and answer questions given below. 5x1=5

Abraham Lincoln served as the 16th President of the United States, yet he never went to college. In fact, Lincoln had nearly no formal education whatsoever, attending schools for less than a year throughout his childhood. Yet this should not be construed to mean that Lincoln was ignorant or unlearned; on the contrary, he was one of the most well-read leaders of the time. The fact is that Abraham Lincoln educated himself by studying books of religion, philosophy, and literature, and he continued his voracious reading throughout his life. A lack of public school education did not prevent Lincoln from becoming a great leader. He led the United States through four years of civil war, which threatened to divide the nation into two separate countries. He was a powerful opponent of slavery, and it was largely through his leadership that slavery was abolished in this country. Lincoln's determination to educate himself through diligent reading also led to his reputation as a great orator—and even today his speeches are quoted and studied worldwide. He serves as an example of a great leader—and a great reader. His love of books and good literature enabled Abraham Lincoln to rise to world renown.

1. What is the main idea of this passage?
- Abe Lincoln was the 16th President of the United States.
 - Abe Lincoln demonstrated the value of reading.
 - Abe Lincoln was a Republican.
 - Abe Lincoln freed the slaves.

2.Lincoln accomplished all of the following EXCEPT

- a. preventing the United States from being divided.
- b. ending slavery.
- c. becoming a great leader.
- d. establishing the Lincoln Memorial.

3. Choose the antonym for the word diligent

- a. lazy
- b. hardworking
- c. crafty
- d. pitiable

4.The underlined word construed, as used in passage, most nearly means

- a. tormented.
- b. taken apart.
- c. unscrewed.
- d. interpreted.

5. According to the passage, what lesson can be learned from the life of Lincoln?

- a. Education is not important.
- b. All books are worth reading.
- c. Good reading habits can help a person do great things.
- d. Politicians are always good role models.

(OR)

12. a) Describe the aim of the ‘the Chipko Movement’ and its benefit to the society. 5M
- b) Write an essay on “Impact of online games on youth” in 500 words. 5M

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UNIT-I

1. a) Explain the formation of depletion region in a PN junction 5M
- b) A P-N junction silicon diode has a reverse saturation current of 50nA at room temperature 27° . If the new reverse saturation current is observed to be 160nA, calculate the value of new temperature. 5M

(OR)

2. a) Explain in detail about V-I characteristics of a Zener diode 5M
- b) Explain in detail about V-I characteristics of a PN junction diode. 5M

UNIT-II

3. a) Draw the circuit diagram of Half-wave rectifier and derive the expressions for average value, R.M.S value and voltage drop across diode 6M
- b) What is meant by ripple factor and derive the expression for HWR. 4M

(OR)

4. a) Derive the expression for ripple factor of a full-wave rectifier with capacitor filter. 5M
- b) Show that the maximum dc output power in half-wave rectifier occurs when the load resistance is equal to the diode forward resistance R_f . 5M

UNIT-III

5. a) Explain about input and output characteristics of a transistor when it is connected in common emitter configuration. 5M
- b) Discuss the operation of enhancement MOSFET at different regions with suitable figures and equations. 5M

(OR)

6. a) List out Few comparisons of CB, CE and CC configurations with examples 5M
- b) Draw and explain the drain characteristics of n-channel enhancement type 5M

UNIT-IV

7. a) Explain the collector to base bias method along with circuit diagram and derive the stability factor for it 5M
- b) Draw the fixed bias circuit and explain it. Write the drawbacks of it. 5M

(OR)

8. a) Explain how the self-bias establishes the stable operating point 5M
- b) What is thermal runaway? Explain how it can be avoided 5M

UNIT-V

9. a) Draw the circuit diagram of voltage Shunt feedback amplifier. Derive input impedance and output impedance of voltage shunt feedback amplifier. 6M
b) Explain how a transistor acts as amplifier 4M
- (OR)**
10. a) Draw the circuit diagram of voltage Series feedback amplifier. Derive input impedance and output impedance of voltage series feedback amplifier. 6M
b) Explain how a transistor acts as a switch 4M

UNIT-VI

11. a) Draw the circuit diagram of Wien Bridge Oscillator and explain. 7M
b) What are the conditions required for sustained oscillations? 3M
- (OR)**
12. a) Derive an expression for the frequency of oscillations for Hartley Oscillator? 5M
b) Derive an expression for the frequency of oscillations for Colpitts's oscillator using BJT 5M

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UNIT-I

1. a) Explain about p-type and n-type semiconductors. 5M
- b) The voltage across a silicon diode at room temperature is 0.7 V when 2 mA current flows through it. If the voltage increases to 0.75 V, calculate the diode current. Assume $V_T = 26 \text{ mV}$. 5M

(OR)

2. a) Explain V-I characteristics of a tunnel diode and write its applications 5M
- b) Explain the construction & working of LED. 5M

UNIT-II

3. a) With necessary waveforms, explain the operation of bridge rectifier. 5M
- b) Derive the expression for ripple factor of a full-wave rectifier with capacitor filter. 5M

(OR)

4. a) Draw the circuit diagram of half-wave rectifier with inductor filter and explain it. 5M
- b) Derive the expression for the ripple factor in a full-wave rectifier using inductor filter and explain its operation 5M

UNIT-III

5. a) Discuss the operation of enhancement MOSFET at different regions with suitable figures and equations. 5M
- b) Explain drain-source characteristics and transfer characteristics of JFET 5M

(OR)

6. a) Calculate the collector current and emitter current for a transistor with $\alpha_{dc} = 0.99$, $I_{CBO} = 50 \mu\text{A}$, $I_B = 20 \mu\text{A}$. 5M
- b) Explain input and output characteristics of a transistor in CE configuration 5M

UNIT-IV

7. a) Derive the expression for stability factor of a collector to base bias circuit 5M
- b) An NPN transistor if $\beta = 50$ is used in common emitter circuit with $V_{cc} = 10\text{V}$ and $R_c = 2\text{k}\Omega$. The bias is obtained by connecting $100\text{k}\Omega$ resistor from collector to base. Find the quiescent point and stability factor. 5M

(OR)

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|----|----|---|----|
| 8. | a) | Draw the Self bias circuit and derive the stability factor for it along with explanation. | 5M |
| | b) | What is thermal runaway and thermal stability | 5M |

UNIT-V

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|-------------|----|--|----|
| 9. | a) | Draw the hybrid parameter equivalent circuit for an NPN common Emitter transistor and explain. | 6M |
| | b) | Explain in detail about the h-parameters using a two port network model | 4M |
| (OR) | | | |
| 10. | a) | Explain the comparison of transistor configurations in terms of $A_v, A_i, R_i, R_o, A_{vs}, A_{is}$. | 4M |
| | b) | In the CE amplifier calculate the mid frequency voltage gain and lower 3-dB point. The transistor has h-parameters $h_{fe}=400$ and $h_{ie}=10k_{\Omega}$, the circuit details are $R_s=600\Omega, R_L=5K\Omega, R_e=1K\Omega, V_{cc}=12V, R_1=15K\Omega, R_2=2.2K\Omega$ and $C_e=50\mu F$. | 6M |

UNIT-VI

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|-------------|----|--|----|
| 11. | a) | Draw the circuit diagram of voltage series feedback amplifier. Derive input impedance and output impedance of voltage series feedback amplifier. | 7M |
| | b) | Explain concept of feed back? | 3M |
| (OR) | | | |
| 12. | a) | Explain the effect of negative feedback on input and output resistances. | 4M |
| | b) | Give the general characteristics negative feedback amplifiers? | 6M |