Signature and Name of Invigilator

1. (Signature) _____

   (Name) _____

2. (Signature) _____

   (Name) _____

OMR Sheet No. : ....
(To be filled by the Candidate)

Roll No. [ ][ ][ ][ ][ ][ ][ ]
(In figures as per admission card)

Roll No. _____
(In words)

D 8 8 1 5

Time : 1¼ hours]

PAPER - II

ELECTRONIC SCIENCE

[Maximum Marks : 100

Number of Pages in this Booklet : **16** | Number of Questions in this Booklet : **50**

Instructions for the Candidates	**परीक्षार्थियों के लिए निर्देश**
1. Write your roll number in the space provided on the top of this page.	1. इस पृष्ठ के ऊपर नियत स्थान पर अपना रोल नम्बर लिखिए।
2. This paper consists of fifty multiple-choice type of questions.	2. इस प्रश्न-पत्र में पचास बहुविकल्पीय प्रश्न हैं।
3. At the commencement of examination, the question booklet will be given to you. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as below :	3. परीक्षा प्रारम्भ होने पर, प्रश्न-पुस्तिका आपको दे दी जायेगी। पहले पाँच मिनट आपको प्रश्न-पुस्तिका खोलने तथा उसकी निम्नलिखित जाँच के लिए दिये जायेंगे, जिसकी जाँच आपको अवश्य करनी है :
(i) To have access to the Question Booklet, tear off the paper seal on the edge of this cover page. Do not accept a booklet without sticker-seal and do not accept an open booklet.	(i) प्रश्न-पुस्तिका खोलने के लिए पुस्तिका पर लगी कागज की सील को फाड़ लें। खुली हुई या बिना स्टिकर-सील की पुस्तिका स्वीकार न करें।
(ii) **Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faulty booklets due to pages/questions missing or duplicate or not in serial order or any other discrepancy should be got replaced immediately by a correct booklet from the invigilator within the period of 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time will be given.**	(ii) **कवर पृष्ठ पर छपे निर्देशानुसार प्रश्न-पुस्तिका के पृष्ठ तथा प्रश्नों की संख्या को अच्छी तरह चैक कर लें कि ये पूरे हैं। दोषपूर्ण पुस्तिका जिनमें पृष्ठ/प्रश्न कम हों या दुबारा आ गये हों या सीरियल में न हों अर्थात किसी भी प्रकार की त्रुटिपूर्ण पुस्तिका स्वीकार न करें तथा उसी समय उसे लौटाकर उसके स्थान पर दूसरी सही प्रश्न-पुस्तिका ले लें। इसके लिए आपको पाँच मिनट दिये जायेंगे। उसके बाद न तो आपकी प्रश्न-पुस्तिका वापस ली जायेगी और न ही आपको अतिरिक्त समय दिया जायेगा।**
(iii) After this verification is over, the Test Booklet Number should be entered on the OMR Sheet and the OMR Sheet Number should be entered on this Test Booklet.	(iii) इस जाँच के बाद प्रश्न-पुस्तिका का नंबर OMR पत्रक पर अंकित करें और OMR पत्रक का नंबर इस प्रश्न-पुस्तिका पर अंकित कर दें।
4. Each item has four alternative responses marked (1), (2), (3) and (4). You have to darken the circle as indicated below on the correct response against each item.	4. प्रत्येक प्रश्न के लिए चार उत्तर विकल्प (1), (2), (3) तथा (4) दिये गये हैं। आपको सही उत्तर के वृत्त को पेन से भरकर काला करना है जैसा कि नीचे दिखाया गया है।
Example : ① ② ● ④ where (3) is the correct response.	**उदाहरण :** ① ② ● ④ जबकि (3) सही उत्तर है।
5. Your responses to the items are to be indicated in the **OMR Sheet given inside the Booklet only.** If you mark your response at any place other than in the circle in the OMR Sheet, it will not be evaluated.	5. प्रश्नों के उत्तर **केवल प्रश्न पुस्तिका के अन्दर दिये गये OMR पत्रक पर ही** अंकित करने हैं। यदि आप OMR पत्रक पर दिये गये वृत्त के अलावा किसी अन्य स्थान पर उत्तर चिन्हांकित करते हैं, तो उसका मूल्यांकन नहीं होगा।
6. Read instructions given inside carefully.	6. अन्दर दिये गये निर्देशों को ध्यानपूर्वक पढ़ें।
7. Rough Work is to be done in the end of this booklet.	7. कच्चा काम (Rough Work) इस पुस्तिका के अन्तिम पृष्ठ पर करें।
8. If you write your Name, Roll Number, Phone Number or put any mark on any part of the OMR Sheet, except for the space allotted for the relevant entries, which may disclose your identity, or use abusive language or employ any other unfair means, such as change of response by scratching or using white fluid, you will render yourself liable to disqualification.	8. यदि आप OMR पत्रक पर नियत स्थान के अलावा अपना नाम, रोल नम्बर, फोन नम्बर या कोई भी ऐसा चिह्न जिससे आपकी पहचान हो सके, अंकित करते हैं अथवा अभद्र भाषा का प्रयोग करते हैं, या कोई अन्य अनुचित साधन का प्रयोग करते हैं, जैसे कि अंकित किये गये उत्तर को मिटाना या सफेद स्याही से बदलना तो परीक्षा के लिये अयोग्य घोषित किये जा सकते हैं।
9. You have to return the original OMR Sheet to the invigilators at the end of the examination compulsorily and must not carry it with you outside the Examination Hall. You are however, allowed to carry original question booklet and duplicate copy of OMR Sheet on conclusion of examination.	9. आपको परीक्षा समाप्त होने पर मूल OMR पत्रक निरीक्षक महोदय को लौटाना आवश्यक है और परीक्षा समाप्ति के बाद उसे अपने साथ परीक्षा भवन से बाहर न लेकर जायें। हालांकि आप परीक्षा समाप्ति पर मूल प्रश्न-पुस्तिका तथा OMR पत्रक की डुप्लीकेट प्रति अपने साथ ले जा सकते हैं।
10. **Use only Blue/Black Ball point pen.**	10. केवल नीले/काले बाल प्वाईंट पेन का ही इस्तेमाल करें।
11. **Use of any calculator or log table etc., is prohibited.**	11. किसी भी प्रकार का संगणक (कैलकुलेटर) या लाग टेबल आदि का प्रयोग वर्जित है।
12. **There are no negative marks for incorrect answers.**	12. गलत उत्तरों के लिए कोई नकारात्मक अंक नहीं हैं।

D-8815

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P.T.O.

ELECTRONIC SCIENCE
PAPER - II

Note : This paper contains **fifty (50)** objective type questions of **two (2)** marks each. **All** questions are **compulsory**.

1. A Si ingot is doped with 10^{16} arsenic atoms / cm^3. Find its fermi-level from bottom of the conduction band at room temperature (300 K) when effective density of states of silicon are 2.8×10^{19} cm^{-3} options are :
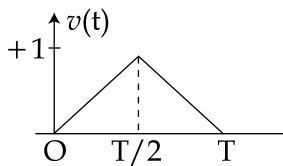
   (1) 0.105 eV   (2) 0.206 eV   (3) 0.354 eV   (4) 0.456 eV

2. The electron density of a n-type semiconductor is proportional to :

   (1) $\exp\left(\dfrac{E_F - E_i}{KT}\right)$ (2) $\exp\left(\dfrac{E_i - E_F}{KT}\right)$

   (3) $\exp\left(\dfrac{-E_g}{KT}\right)$ (4) $\exp\left(\dfrac{-E_g}{2KT}\right)$

3. The correct expression of the following triangular wave is :

   (1) $v(t) = \dfrac{1}{T} r(T) + \dfrac{4}{T} (t - T/2) + \dfrac{2}{T} r(t - T)$

   (2) $v(t) = \dfrac{2}{T} r(T) - \dfrac{4}{T} r(T - T/2) + \dfrac{2}{T} r(t - T)$

   (3) $v(t) = \dfrac{-2}{T} r(T) + \dfrac{4}{T} r(t - T/2) - \dfrac{1}{T} r(t - T)$

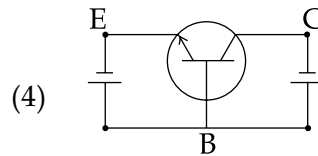   (4) $r(t) = \dfrac{1}{T} r(T) - \dfrac{3}{T} r(t - T/2) + \dfrac{1}{3} r(t - T)$
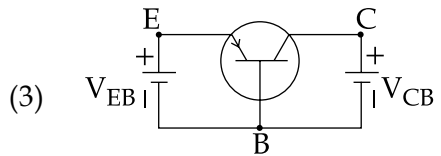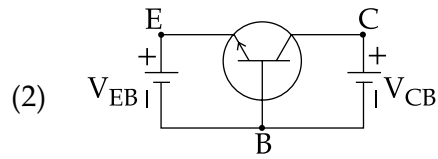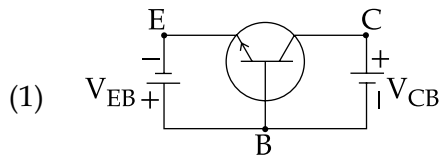
4. The modulus of the following complex number is given by :

   $Z = \dfrac{(1 - 2j)(3 + j1)(1 + j1)}{j(1 - j1)}$

   (1) $\sqrt{3}$ (2) $\sqrt{7}$ (3) $\sqrt{50}$ (4) 0

5. Which one of the below referred figure represents the cut - off of npn or pnp transistor ?

(1)   (2)

(3)   (4)

6. The full scale output of a 10 - bit DAC is 5V. The resolution is :

(1)   5 mV   (2)   10 mV   (3)   2.5 mV   (4)   20 mV

7. The contents of accumulator after the execution of the following instruction will be :

MVI A, A7H

ORA A

RLC

(1)   CFH   (2)   4FH   (3)   4EH   (4)   CEH

8. The following statement of 'C' :

$X - = Y + 1$; does the same as

(1) $X = X - Y + 1$ (2) $X = -X - Y - 1$ (3) $X = -X + Y + 1$ (4) $X = X - Y - 1$

9. Pointer arithematic cannot be performed on :

(1)   Dangling pointer   (2)   Uninitialized pointers

(3)   Array name   (4)   Void pointer

10. A wave is propagated in a parallel - plane waveguide. If the frequency is 6 GHz and the plane separation is 3 cm then the cut - off wavelength for the dominant mode will be :

(1)   3 cm   (2)   6 cm   (3)   12 cm   (4)   9 cm

11. The noise density of a pink noise is proportional to :

(1) f (2) $\dfrac{1}{f}$ (3) f^2 (4) $\dfrac{1}{f2}$

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12. A high frequency signal is frequency modulated by n number of modulating signals. The ideal number of sidebands in the modulated signal will be :

   (1)   n   (2)   2 n   (3)   4 n   (4)   Infinite

13. The material $LiNbO_3$ is used in the manufacturing of the following device :

   (1)   UJT   (2)   LED   (3)   SCR   (4)   Indirect - Modulator

14. A 50 Ω strain gauge of gauge factor 2 is connected to the first arm of a wheatstone bridge. Under no strain condition, all the arms have equal resistance. When the gauge is subjected to a strain, the second arm resistance has to be changed to 50.5 Ω to obtain a balance. The value of strain is :

   (1)   0.0005   (2)   0.005   (3)   0.05   (4)   0.5

15. A negative feedback control system whose open loop transfer function G(S) has feedback transfer function H(S) can be replaced by a single block with transfer function :

   (1) $\dfrac{G(S)}{1 + G(S)H(S)}$ (2) $\dfrac{G(S)}{1-G(S)H(S)}$ (3) $\dfrac{H(S)}{1+G(S)H(S)}$ (4) $\dfrac{H(S)}{1-G(S)H(S)}$

16. Which of the following statements are correct for Tunnel Diode ?

   (a)   1 impurity atom in 10^3 atoms
   (b)   Very high doping in both p and n regions
   (c)   1 impurity atom in 10^8 atoms
   (d)   used as a voltage controlled devices

   Out of the above, the following is the correct answer :

   (1)   (a) and (b) are correct   (2)   (a), (b) and (c) are correct
   (3)   (b), (c) and (d) are correct   (4)   (b) and (c) are correct

17. Following statements are given for Laplace transforms :

   (a) $L\left[x(t)\right] = \int\limits_{-\infty}^{\infty} x(t)e^{st}\, dt$ (b) $L\left[x(t)\right] = \int\limits_{-\infty}^{\infty} x(t)e^{-st}\, dt$

   (c) $L\left[te^{-at}u(t)\right] = \dfrac{1}{(s+a)^2}$ (d) $L\left[te^{-at}u(t)\right] = \dfrac{1}{(s-a)^2}$

   Out of the above, the following is the correct answer :

   (1)   (a), (c) are correct   (2)   (b) and (c) are correct
   (3)   (a), (d) are correct   (4)   none is correct

18. Negative Feedback in amplifiers :

    (a) improves signal to noise ratio at the output

    (b) increases distortion

    (c) reduces impact offset voltage

    (d) increases bandwidth

    Options :

    (1) (a) and (c) are correct   (2) (a) and (d) are correct

    (3) (a), (b) and (d) are correct   (4) all are correct

19. CMOS logic gates are preferred over TTL logic as :

    (a) CMOS has lower power dissipation and high fan out

    (b) Needs no protection circuitry

    (c) Propagation delay is small as compared to TTL

    (d) High noise margin for higher values of VDD

    Out of the above, the following is true :

    (1) (a) and (b)   (2) (b) and (c)

    (3) (a) and (d)   (4) (b) and (d)

20. Read the following statements :

    (a) The number of conditional flags in Intel's 8085 microprocessor is 5

    (b) In Intel's 8085 microprocessor, RST 7.5 interrupt transfers execution to memory location 003CH

    (c) Intel's 8086 microprocessor is a 8 bit processor available as 40 pin DIP

    (d) Intel's 8086 microprocessor is a 16 bit processor available as a 48 pin DIP

    Which of the above statements are correct ?

    (1) (a) and (b) only   (2) (a) and (c) only

    (3) (c) and (d) only   (4) (b) and (c) only

21. Consider the following program segment :

Struct Address

{

      char   city [20];

      char   house no [5];

      int   pincode;

};

Struct

      {

            char   name[30];

            char   sex

            struct   Address   my location;

}   me,   *sptr = & me;

* (me → name + 2) can be used instead of

(a)   sptr → (name + 2)   (b)   * (me.name + 2)

(c)   *((*sptr) . name + 2)   (d)   None of the above

Which of the above are correct ?

(1)   only (a) and (b) (2)   only (b) and (c) (3)   only (c) and (d) (4)   only (a) and (d)

22. Read the following statements :

(a)   The SWR is a measure of the mismatch between the load and the line.

(b)   If the load is purely reactive, SWR will be unity.

(c)   If the load is perfectly matched, the SWR is equal to infinity.

(d)   The higher the SWR, the greater the mismatch between line and load.

Which of the above are correct ?

(1)   only (a) and (b) (2)   only (b) and (c) (3)   only (c) and (d) (4)   only (a) and (d)

23. Read the following statements regarding a superheterodyne receiver :

(a)   It is suitable for most of the radio receiver applications.

(b)   In the superheterodyne receiver, the signal voltage is combined with the local oscillator voltage.

(c)   The mixer output in superheterodyne receiver may be an audio signal.

(d)   It has simple circuit as compared to TRF.

Which of the above statements are correct ?

(1)   (a) and (c)   (2)   (b) and (c)   (3)   (c) and (d)   (4)   (a), (b) and (c)

24. Fiber Bragg Grating (FBG) are used in the following :
    (a) Wavelength filtering/Routers
    (b) Dispersion Compensators
    (c) EDFA
    (d) Photo detectors
    Out of the above statements, following is true :
    (1) (a), (b), and (c) are correct   (2) (b), (c), and (d) are correct
    (3) (a) and (b) are correct   (4) (c), and (d) are correct

25. Read the following statements :
    (a) A system that may be described in the phase variable format is always controllable.
    (b) A system that is described in the phase variable format is never controllable.
    (c) A system that can be described in the phase variable is always observable.
    (d) A system that can be described in the phase variable format is never observable.
    (1) (a) and (b)   (2) (b) and (c)   (3) (a) and (c)   (4) (c) and (d)

26. Match the following :

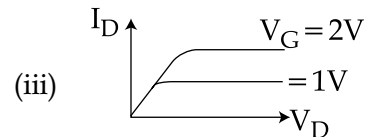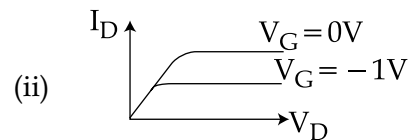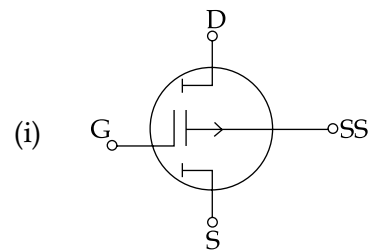   **List - I**   **List - II**

    (a) n-channel Enhancement (Normally off)   (i)

    (b) p-channel Depletion MOSFET (Normally on)   (ii)

    (c) n-channel FET   (iii)

    (d) p-channel Enhancement MOSFET   (iv)
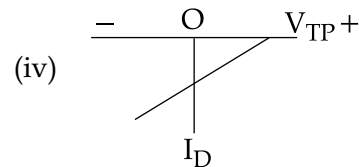
    Codes :
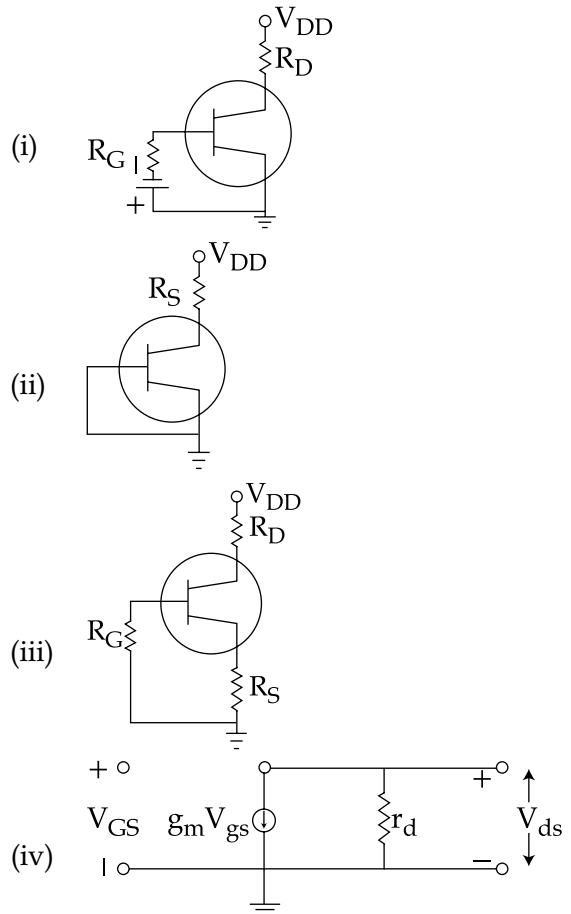
	(a)	(b)	(c)	(d)
(1)	(iii)	(iv)	(ii)	(i)
(2)	(i)	(iv)	(ii)	(iii)
(3)	(i)	(ii)	(iv)	(iii)
(4)	(iii)	(ii)	(iv)	(i)

27. Match the following :

	List - I		**List - II**
(a)	$x(n - n_0)$	(i)	$X(1/Z)$
(b)	$x(-n)$	(ii)	$X(z/Z_0)$
(c)	$Z_0^n\, x(n)$	(iii)	$X(e^{-jw_0}z)$
(d)	$e^{jwn} x(n)$	(iv)	$Z^{-n_0} X(Z)$

Codes :

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iii)	(iv)	(i)	(ii)
(2)	(iv)	(i)	(ii)	(iii)
(3)	(ii)	(iii)	(iv)	(i)
(4)	(i)	(ii)	(iv)	(iii)

28. Match the following :

List - I

(a) JFET $V_{GS=0V}$

(b) JFET self-bias

(c) JFET Fixed bias

(d) FET Low Frequencies circuit

List - II

(i)

(ii)

(iii)

(iv)

Codes :

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iv)	(iii)	(i)	(ii)
(2)	(ii)	(i)	(iii)	(iv)
(3)	(i)	(iii)	(ii)	(iv)
(4)	(ii)	(iii)	(i)	(iv)

29. Match the following in context of Fan out of various families :

   List - I

   (a) DTL

   (b) TTL

   (c) PMOS

   (d) CMOS

   List - II

   (i)   20

   (ii) 30

   (iii) 50

   (iv) 5 to 15

   Codes :

	(a)	**(b)**	**(c)**	**(d)**
(1)	(ii)	(iii)	(iv)	(i)
(2)	(iv)	(ii)	(i)	(iii)
(3)	(iii)	(i)	(ii)	(iv)
(4)	(ii)	(iv)	(i)	(iii)

30. Match among the following pair in the context of an 8085 microprocessor :

   List - I

   (a) DAA

   (b) XTHL

   (c) RST

   (d) ANI

   List - II

   (i)   Data transfer Instruction

   (ii) Branch Instruction

   (iii) Logic Instruction

   (iv) Arithmetic Instruction

   Codes :

	(a)	**(b)**	**(c)**	**(d)**
(1)	(i)	(iii)	(iv)	(ii)
(2)	(iv)	(i)	(ii)	(iii)
(3)	(iii)	(ii)	(i)	(iv)
(4)	(ii)	(iii)	(i)	(iv)

31. Match the following :

    List - I

    (a) The C construct that is used to
        terminate the current iteration
        of loop is

    (b) The go to statement in C is
        equivalent to

    (c) By default members of a class
        in C++ are

    (d) By default members of a structure
        in C++ are

    List - II

    (i) break statement

    (ii) Public

    (iii) Continue Statement

    (iv) Private

    Codes :

	(a)	(b)	(c)	(d)
(1)	(i)	(iv)	(ii)	(iii)
(2)	(iii)	(ii)	(i)	(iv)
(3)	(i)	(iii)	(ii)	(iv)
(4)	(iii)	(i)	(iv)	(ii)

32. Match the following :

    List - I

    (a) VSWR

    (b) Reflection Coefficient

    (c) Magnetic flux density

    (d) Magnetic field intensity

    List - II

    (i) Weber/m

    (ii) ≥ 1

    (iii) Ampere/m

    (iv) ≤ 1

    Codes :

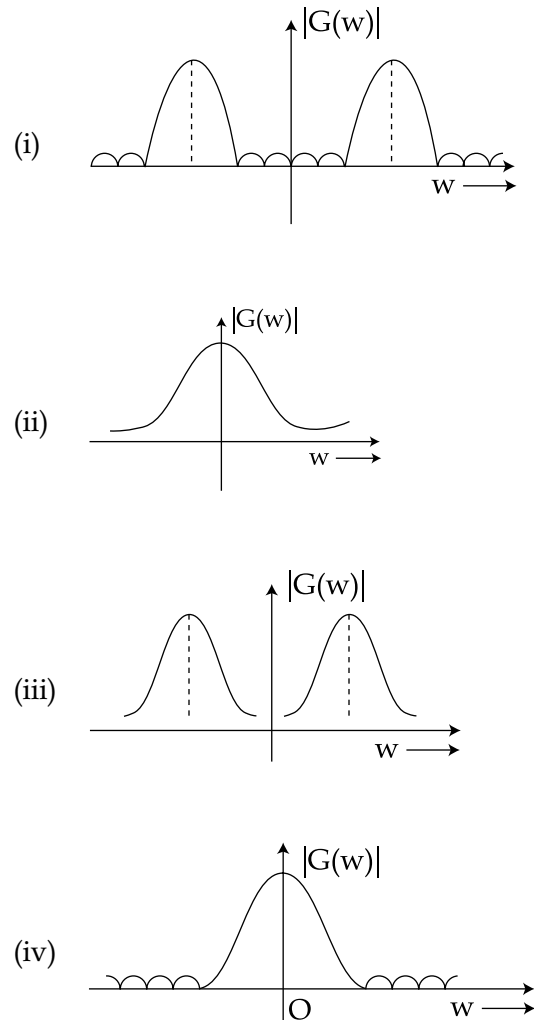 | | (a) | (b) | (c) | (d) |
    |-----|-------|-------|-------|-------|
    | (1) | (i) | (ii) | (iv) | (iii) |
    | (2) | (ii) | (iv) | (i) | (iii) |
    | (3) | (iii) | (i) | (ii) | (iv) |
    | (4) | (iv) | (ii) | (i) | (iii) |

33. Match the following :

List - I		**List - II**

(a) Rectangular Pulse (i)

(b) Double-sided Exponential (ii)

(c) Cosine Pulse (iii)

(d) Damped Sine (iv)

Codes :

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iv)	(ii)	(iii)	(i)
(2)	(iii)	(i)	(iv)	(ii)
(3)	(ii)	(i)	(iii)	(iv)
(4)	(iv)	(ii)	(i)	(iii)

34. Match the following :

   List - I

   (a) Cyclo converter

   (b) TRIAC

   (c) Chopper

   (d) UJT

   List - II

   (i) Fan Regulator

   (ii) Relaxation Oscillator

   (iii) DC - drives

   (iv) RF heating

   Codes :

	(a)	(b)	(c)	(d)
(1)	(ii)	(i)	(iii)	(iv)
(2)	(i)	(iv)	(ii)	(iii)
(3)	(iv)	(i)	(iii)	(ii)
(4)	(iv)	(iii)	(ii)	(i)

35. Match the following :

   List - I

   (a) $U(t)$

   (b) t

   (c) t^2

   (d) e^{-at}

   List - II

   (i) $\dfrac{TZ}{(Z-1)^2}$

   (ii) $\dfrac{Z}{Z-e^{-aT}}$

   (iii) $\dfrac{Z}{Z-1}$

   (iv) $\dfrac{T^2 Z(Z+1)}{(Z-1)^3}$

   Codes :

	(a)	(b)	(c)	(d)
(1)	(i)	(ii)	(iii)	(iv)
(2)	(ii)	(iii)	(iv)	(i)
(3)	(iii)	(i)	(iv)	(ii)
(4)	(iv)	(i)	(ii)	(iii)

Directions : Question No. 36 to 45.

The following items consist of two statements, one labelled as **"Assertion (A)"** and the other labelled as the **"Reason (R)"**. You are to examine the two statements carefully and decide if the **Assertion (A)** and the **Reason (R)** are individually true and if so whether the reason is a correct explanation of the assertion. Select your answer to these items using the codes given below and mark your answer accordingly.

Codes :

(1) Both **(A)** and **(R)** are true and **(R)** is the correct explanation of **(A)**

(2) Both **(A)** and **(R)** are true, but **(R)** is not the correct explanation of **(A)**

(3) **(A)** is true, but **(R)** is false

(4) **(A)** is false, but **(R)** is true

36. **Assertion (A) :** The epitaxial layer growth possesses the same crystal structure to that of the substrate on which it is grown.

    Reason (R) : It can only be of similar conductivity type but possesses different value of resistivity to that of the substrate.

37. **Assertion (A) :** Cut set is that set of elements that dissociates two main portions of a network, such that replacing any one element will destroy this property.

    Reason (R) : It is always not possible to trace the path from one node to any other node by travelling along the tree branch only.

38. **Assertion (A) :** A sinusoidal signal applied to the input of an ideal class A amplifier usually does not produce an exact replica of the input signal waveform.

    Reason (R) : This variation is caused due to non-linearity in the characteristics of the transistors.

39. **Assertion (A) :** The output of an 8 bit A to D convertor is 80H for an input of 2.5V.
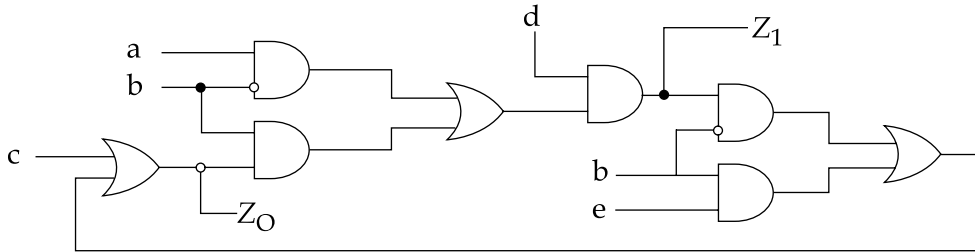
    Reason (R) : ADC has an output range of 00 to FFH for an input range of $-5V$ to $+5V$.

40. For the circuit shown below consider the two statements :

   Assertion (A) : The circuit is sequential.

   Reason (R) : There is a loop in circuit.

41. **Assertion (A) :** The sign of the result of evaluation of modulus operator depends upon the sign of numerator only.

   Reason (R) : If the denominator is negative, the result will be negative and if the denominator is positive, the result will be positive.

42. **Assertion (A) :** A waveguide directional coupler is a four-port waveguide function device that samples part of the EM wave power through the main waveguide.

   Reason (R) : The direction couplers are described by coupling factor directivity and VSWR.

43. **Assertion (A) :** Phase delay distortion can be reduced to acceptable levels by using equalization on the channel.

   Reason (R) : The equalizer automatically varies its delay characteristics while sampling the return signal to determine, when the channel plus equalizer delay reach proper tolerances.

44. **Assertion (A) :** In PIN photodiodes, an intrinsic layer is there, which is slightly doped with n type material.

   Reason (R) : It disables us to increase the width of the depletion region to a value which is far lesser what it could be in a PN diode.

45. **Assertion (A) :** The roots of the characteristic equation must lie in the left hand s-plane for the system to exhibit a stable time response.

   Reason (R) : Routh-Hurwitz criterion is a necessary and sufficient criterion for stability.

Read the passage and answer the following questions numbering from 46 to 50.

An antenna is a key component of a wireless link which efficiently couples electromagnetic energy from the transmitter to free space and from free space to the receiver. An antenna is generally a bidirectional device, i.e, the power through the antenna can flow in both the directions, hence it works as a transmitting as well as a receiving antenna. An antenna acts as an interface between the radiated electromagnetic waves and the guided waves. It can be thought of as a mode transformer which transforms a guided wave field distribution into a radiated - wave field distribution.

46. The angular distribution of the transmitted power around the antenna is generally known as :

   (1)   Angular pattern   (2)   Power pattern

   (3)   Radiation pattern   (4)   Antenna array

47. Ultra High Frequency (UHF) spectrum is defined as :

   (1)   30 kH_z - 300 kH_z (2)   3 MH_z - 30 MH_z

   (3)   300 MH_z - 3 GH_z (4)   30 GH_z - 300 GH_z

48. The most basic antenna element is :

   (1)   Hertzian dipole   (2)   Short dipole

   (3)   Half - wave dipole   (4)   Monopole

49. The radiation efficiency of an antenna with input power 100 W and power dissipation 1 W is :

   (1)   9.9%   (2)   0.99%   (3)   99%   (4)   100%

50. An antenna that is circulary polarized is :

   (1)   Small circular loop   (2)   Parabolic reflector

   (3)   Yogi - uda   (4)   Helical

- o 0 o -

Space For Rough Work