Test Paper : **II**

Test Subject : **ELECTRONIC SCIENCE**

Test Subject Code : **K-3116**

Test Booklet Serial No. : _____

OMR Sheet No. : _____

Roll No. | | | | | | | | |

(Figures as per admission card)

Name & Signature of Invigilator/s

Signature : _____

Name : _____

Paper : II

Subject : ELECTRONIC SCIENCE

Time : 1 Hour 15 Minutes

Maximum Marks : 100

Number of Pages in this Booklet : **12**

Number of Questions in this Booklet : **50**

ಅಭ್ಯರ್ಥಿಗಳಿಗೆ ಸೂಚನೆಗಳು

1. ಈ ಪುಟದ ಮೇಲ್ತುದಿಯಲ್ಲಿ ಒದಗಿಸಿದ ಸ್ಥಳದಲ್ಲಿ ನಿಮ್ಮ ರೋಲ್ ನಂಬರನ್ನು ಬರೆಯಿರಿ.
2. ಈ ಪತ್ರಿಕೆಯು ಬಹು ಆಯ್ಕೆ ವಿಧದ ಐವತ್ತು ಪ್ರಶ್ನೆಗಳನ್ನು ಒಳಗೊಂಡಿದೆ.
3. ಪರೀಕ್ಷೆಯ ಪ್ರಾರಂಭದಲ್ಲಿ, ಪ್ರಶ್ನೆಪುಸ್ತಿಕೆಯನ್ನು ನಿಮಗೆ ನೀಡಲಾಗುವುದು. ಮೊದಲ 5 ನಿಮಿಷಗಳಲ್ಲಿ ನೀವು ಪುಸ್ತಿಕೆಯನ್ನು ತೆರೆಯಲು ಮತ್ತು ಕೆಳಗಿನಂತೆ ಕಡ್ಡಾಯವಾಗಿ ಪರೀಕ್ಷಿಸಲು ಕೋರಲಾಗಿದೆ.
   (i) ಪ್ರಶ್ನೆ ಪುಸ್ತಿಕೆಗೆ ಪ್ರವೇಶಾವಕಾಶ ಪಡೆಯಲು, ಈ ಹೊದಿಕೆ ಪುಟದ ಅಂಚಿನ ಮೇಲಿರುವ ಪೇಪರ್ ಸೀಲನ್ನು ಹರಿಯಿರಿ. ಸ್ಟಿಕ್ಕರ್ ಸೀಲ್ ಇಲ್ಲದ ಅಥವಾ ತೆರೆದ ಪುಸ್ತಿಕೆಯನ್ನು ಸ್ವೀಕರಿಸಬೇಡಿ.
   (ii) **ಪುಸ್ತಿಕೆಯಲ್ಲಿನ ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ ಮತ್ತು ಪುಟಗಳ ಸಂಖ್ಯೆಯನ್ನು ಮುಖಪುಟದ ಮೇಲೆ ಮುದ್ರಿಸಿದ ಮಾಹಿತಿಯೊಂದಿಗೆ ತಾಳೆ ನೋಡಿರಿ. ಪುಟಗಳು/ಪ್ರಶ್ನೆಗಳು ಕಾಣೆಯಾದ, ಅಥವಾ ದ್ವಿಪ್ರತಿ ಅಥವಾ ಅನುಕ್ರಮವಾಗಿಲ್ಲದ ಅಥವಾ ಇತರ ಯಾವುದೇ ವ್ಯತ್ಯಾಸದ ದೋಷಪೂರಿತ ಪುಸ್ತಿಕೆಯನ್ನು ಕೂಡಲೆ 5 ನಿಮಿಷದ ಅವಧಿ ಒಳಗೆ, ಸಂವೀಕ್ಷಕರಿಂದ ಸರಿ ಇರುವ ಪುಸ್ತಿಕೆಗೆ ಬದಲಾಯಿಸಿಕೊಳ್ಳಬೇಕು. ಆ ಬಳಿಕ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯನ್ನು ಬದಲಾಯಿಸಲಾಗುವುದಿಲ್ಲ, ಯಾವುದೇ ಹೆಚ್ಚು ಸಮಯವನ್ನೂ ಕೊಡಲಾಗುವುದಿಲ್ಲ.**
4. ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೂ (A), (B), (C) ಮತ್ತು (D) ಎಂದು ಗುರುತಿಸಿದ ನಾಲ್ಕು ಪರ್ಯಾಯ ಉತ್ತರಗಳಿವೆ. ನೀವು ಪ್ರಶ್ನೆಯ ಎದುರು ಸರಿಯಾದ ಉತ್ತರದ ಮೇಲೆ, ಕೆಳಗೆ ಕಾಣಿಸಿದಂತೆ ಅಂಡಾಕೃತಿಯನ್ನು ಕಪ್ಪಾಗಿಸಬೇಕು.
   ಉದಾಹರಣೆ: (A) (B) ● (D)
   (C) ಸರಿಯಾದ ಉತ್ತರವಾಗಿದ್ದಾಗ.
5. ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ I ರಲ್ಲಿ **ಕೊಟ್ಟಿರುವ OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ, ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ I ಮತ್ತು ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ II ರಲ್ಲಿ ಇರುವ ಪ್ರಶ್ನೆಗಳಿಗೆ ನಿಮ್ಮ ಉತ್ತರಗಳನ್ನು ಸೂಚಿಸತಕ್ಕದ್ದು.** OMR ಹಾಳೆಯಲ್ಲಿ ಅಂಡಾಕೃತಿಯಲ್ಲದೆ ಬೇರೆ ಯಾವುದೇ ಸ್ಥಳದಲ್ಲಿ ಉತ್ತರವನ್ನು ಗುರುತಿಸಿದರೆ, ಅದರ ಮೌಲ್ಯಮಾಪನ ಮಾಡಲಾಗುವುದಿಲ್ಲ.
6. OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಕೊಟ್ಟ ಸೂಚನೆಗಳನ್ನು ಜಾಗರೂಕತೆಯಿಂದ ಓದಿರಿ.
7. ಎಲ್ಲಾ ಕರಡು ಕೆಲಸವನ್ನು ಪುಸ್ತಿಕೆಯ ಕೊನೆಯಲ್ಲಿ ಮಾಡತಕ್ಕದ್ದು.
8. ನಿಮ್ಮ ಗುರುತನ್ನು ಬಹಿರಂಗಪಡಿಸಬಹುದಾದ ನಿಮ್ಮ ಹೆಸರು ಅಥವಾ ಯಾವುದೇ ಚಿಹ್ನೆಯನ್ನು, ಸಂಗತವಾದ ಸ್ಥಳ ಹೊರತುಪಡಿಸಿ, OMR ಉತ್ತರ ಹಾಳೆಯ ಯಾವುದೇ ಭಾಗದಲ್ಲಿ ಬರೆದರೆ, ನೀವು ಅನರ್ಹತೆಗೆ ಬಾಧ್ಯರಾಗಿರುತ್ತೀರಿ.
9. ಪರೀಕ್ಷೆಯು ಮುಗಿದನಂತರ, ಕಡ್ಡಾಯವಾಗಿ OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ಸಂವೀಕ್ಷಕರಿಗೆ ನೀವು ಹಿಂತಿರುಗಿಸಬೇಕು ಮತ್ತು ಪರೀಕ್ಷಾ ಕೊಠಡಿಯ ಹೊರಗೆ OMR ನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ಕೊಂಡೊಯ್ಯಕೂಡದು.
10. ಪರೀಕ್ಷೆಯ ನಂತರ, ಪರೀಕ್ಷಾ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯನ್ನು ಮತ್ತು ನಕಲು OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ತೆಗೆದುಕೊಂಡು ಹೋಗಬಹುದು.
11. **ನೀಲಿ/ಕಪ್ಪು ಬಾಲ್‌ಪಾಯಿಂಟ್ ಪೆನ್ ಮಾತ್ರವೇ ಉಪಯೋಗಿಸಿರಿ.**
12. **ಕ್ಯಾಲ್ಕುಲೇಟರ್, ವಿದ್ಯುನ್ಮಾನ ಉಪಕರಣ ಅಥವಾ ಲಾಗ್ ಟೇಬಲ್ ಇತ್ಯಾದಿಯ ಉಪಯೋಗವನ್ನು ನಿಷೇಧಿಸಲಾಗಿದೆ.**
13. **ಸರಿ ಅಲ್ಲದ ಉತ್ತರಗಳಿಗೆ ಋಣ ಅಂಕ ಇರುವುದಿಲ್ಲ.**
14. **ಕನ್ನಡ ಮತ್ತು ಇಂಗ್ಲೀಷ್ ಆವೃತ್ತಿಗಳ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಗಳಲ್ಲಿ ಯಾವುದೇ ರೀತಿಯ ವ್ಯತ್ಯಾಸಗಳು ಕಂಡುಬಂದಲ್ಲಿ, ಇಂಗ್ಲೀಷ್ ಆವೃತ್ತಿಗಳಲ್ಲಿರುವುದೇ ಅಂತಿಮವೆಂದು ಪರಿಗಣಿಸಬೇಕು.**

Instructions for the Candidates

1. Write your roll number in the space provided on the top of this page.
2. This paper consists of fifty multiple-choice type of questions.
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 :
   (i) To have access to the Question Booklet, tear off the paper seal on the edge of the cover page. Do not accept a booklet without sticker seal or open booklet.
   (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.**
4. Each item has four alternative responses marked (A), (B), (C) and (D). You have to darken the circle as indicated below on the correct response against each item.
   Example : (A) (B) ● (D)
   where (C) is the correct response.
5. Your responses to the questions are to be indicated in the **OMR Sheet kept inside the Paper I Booklet only**. If you mark at any place other than in the circles in the OMR Sheet, it will not be evaluated.
6. Read the instructions given in OMR carefully.
7. Rough Work is to be done in the end of this booklet.
8. If you write your name or put any mark on any part of the OMR Answer Sheet, except for the space allotted for the relevant entries, which may disclose your identity, you will render yourself liable to disqualification.
9. You have to return the test OMR Answer Sheet to the invigilators at the end of the examination compulsorily and must NOT carry it with you outside the Examination Hall.
10. You can take away question booklet and carbon copy of OMR Answer Sheet after the examination.
11. **Use only Blue/Black Ball point pen.**
12. **Use of any calculator, Electronic gadgets or log table etc., is prohibited.**
13. **There is no negative marks for incorrect answers.**
14. **In case of any discrepancy found in the Kannada translation of a question booklet the question in English version shall be taken as final.**

ELECTRONIC SCIENCE
Paper – II

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

1. If too large current passes through the diode

(A) All electrons will leave

(B) All holes will freeze

(C) Excessive heat may damage the diode

(D) Diode will emit light

2. Working principle of zener diode is

(A) Tunneling of charge carriers across the junction

(B) Thermionic emission

(C) Hopping of charge carriers across the junction

(D) Diffusion of charge carriers across the junction

3. A circuit with a resistor, inductor and capacitor in series is resonant of f_0 Hz. If all the component values are now doubled the new resonant frequency is

(A) $2 f_0$

(B) remains unchanged

(C) $f_0/2$

(D) $f_0/4$

4. Z-transform of x (– n) is

(A) $X\left(\frac{1}{2}\right)$

(B) X (2)

(C) $X(2^{-2})$

(D) $\frac{1}{X(2)}$

5. The horizontal intercept of dc load line in BJT is same as ideal

(A) Cutoff point

(B) Saturation point

(C) Operating point

(D) Quasi saturation point

6. When a PLL is locked the phase difference, between input signal and VCO output is

(A) 0°

(B) 90°

(C) 180°

(D) 359°

7. We say that a set of gates is logically complete if we can build any CKT without using any other kind of gates. Which of the following sets are logically complete ?

(A) Set of {AND, OR}

(B) Set of {EXOR, NOT}

(C) Set of {AND, OR, NOT}

(D) Set of {EXNOR, NOT}

8. In a standard TTL, the totem pole stage refers to

(A) The multiemitter input stage

(B) The phase splitter

(C) The o/p buffer

(D) Open collector o/p stage

9. In 8085 which addressing mode is also called inherent addressing ?

(A) Direct

(B) Register

(C) Implicit

(D) Immediate

10. In 8085, the pins of SID and SOD are

(A) 4 and 5 respectively

(B) 5 and 4 respectively

(C) 3 and 4 respectively

(D) 4 and 3 respectively

11. int a [5] = {0, 1, 2, 3};
What value is assigned to a [4] in the above declaration ?

(A) 3

(B) 4

(C) 0

(D) junk value

12. Which of the following is not a valid identifier ?

(A) _ examname

(B) 1examname

(C) exam_name

(D) examname1

13. The divergence of a vector field

$\vec{A} = x\hat{a}_x + y\hat{a}_y + 2\hat{a}_2 i_s$

(A) 0

(B) $\frac{1}{3}$

(C) 1

(D) 3

14. A PIN diode can be used

(A) as a shunt mounted switch

(B) as a series mounted switch

(C) both as series or shunt mounted switch

(D) cannot be used as a switch

15. Four 5 KHz band limited signals are sampled at twice the nyquist rate . The resulting PAM signals are transmitted over a single channel after time division multiplexing. Theoretical minimum transmission bandwidth of the channel should be equal to

(A) 5 KHz

(B) 20 KHz

(C) 40 KHz

(D) 80 KHz

16. A signal of maximum frequency 10 KHz is sampled at double the Nyquist rate

(A) 25 μs

(B) 2.5 μs

(C) 50 μs

(D) 50 ms

17. A switch mode power supply operation of 20 KHz to 100 KHz range uses as the main switching element

(A) Thyristor

(B) MOSFET

(C) TRIAC

(D) UJT

18. For a laser beam $\lambda = 4400\ \mathring{A}$ and coherence time $= 4 \times 10^{-5}$ s, the coherence length will be

(A) 12 km

(B) 1.2 km

(C) 0.12 km

(D) 0.012 km

19. The Q meter works on the principle of

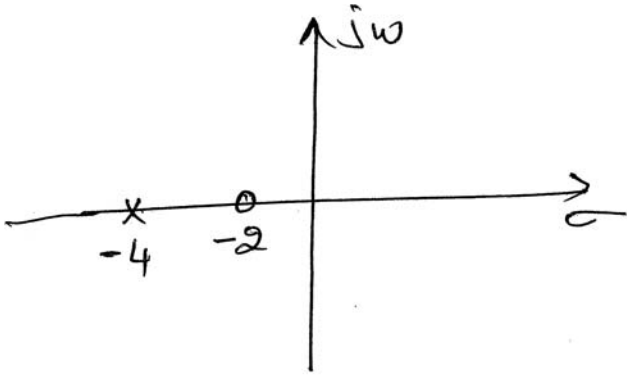
(A) mutual inductance

(B) self inductance

(C) series capacitance

(D) resonance circuit

20. Refer to the pole-zero plot shown in the following figure. This pole-zero plot identifies with one of the following control system compensators



(A) Lag-lead compensator

(B) Lead compensator

(C) Lag-compensator

(D) Feed forward compensator

Q.No. (s) **21 to 30 :**

The following items consists of two statements, one labeled the "Assertion (A)" and other "Reason (R)". You are to examine these two statements carefully and decide if the Assertion (A) and the Reason (R) an 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 :

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

(B) Both (A) and (R) are true, but (R) is not correct explanation of (A)

(C) (A) is true but (R) is false

(D) (A) is false but (R) is true

21. Assertion (A) : A JFET can be used as a current source.

Reason (R) : In beyond pinch off region the current in JFET is nearly constant.

22. Assertion (A) : In series R-L-C circuit, the current may lead or lag the voltage depending on the value of R.

Reason (R) : Phase angle of an R-L series circuit is $\tan^{-1}$ (WL/R)

23. Assertion (A) : Op-Amp based amplifier has got Q-point located at O volts.

Reason (R) : Op-Amp has low input impedance and low open loop gain.

24. Assertion (A) : The carry look ahead address is very fast.

Reason (R) : The carry look ahead adder generates the carry and sum digits directly.

25. Assertion (A) : Each memory chip has its own address decoder.

Reason (R) : ALE signal comes out of microprocessor 8085 and goes to memory chip.

26. Assertion (A) : Negative values of incremental operator in DO loop are allowed in Fortran 77 but not in earlier versions of Fortran.

Reason (R) : Fortran 77 has better array facilities than earlier versions of Fortran.

27. Assertion (A) : Stub is used in transmission line to increase the speed of transmission.

Reason (R) : Transmission line have reactive element.

28. Assertion (A) : FSK is a method used for coding the message in Digital Communication.

Reason (R) : Coding ensures noise immunity and channel efficiency.

29. Assertion (A) : The gate current of an SCR is usually in the form of pulses.

Reason (R) : The gate losses, in pulse triggering are low.

30. Assertion (A) : A radiation pyrometer is very suitable for high temperature measurement.

Reason (R) : When temperature is high, a physical contact between hot body and thermometer is not desirable.

31. In N-well CMOS process, sequence the processes in the order of fabrication

1) Expose to highly purity oxygen and hydrogen at 1000° C
2) P-type of silicon substrate
3) Photo resist cooling
4) Oxidation

(A) 1, 2, 3, 4

(B) 2, 1, 3, 4

(C) 2, 4, 3, 1

(D) 2, 1, 4, 3

32. Following are the sub families of TTL

1) 7400
2) 74H00
3) 74LS00
4) 74F00

Arrange these in increasing order of typical propagation delay.

(A) 1, 2, 3, 4

(B) 4, 2, 1, 3

(C) 4, 2, 3, 1

(D) 3, 4, 2, 1

33. Arrange the following in increasing order of possible outcomes.

1) A + B
2) A > B
3) Switch statement

(A) 1, 2, 3

(B) 3, 2, 1

(C) 2, 1, 3

(D) 3, 1, 2

34. With reference to the channel coding theorem the average probability of error (P_e) is as follows :

$P_e = \{10^{-8}, 3 \times 10^{-4}, 10^{-2}, 10^{-6}, 4 \times 10^{-7}\}$

The code rates given are as follows :

I. 1

II. $1/3$

III. $\frac{1}{5}$

IV. $\frac{1}{7}$

V. $\frac{1}{9}$

The correct sequence of code rates matching the P_e is

(A)	III	II	I	V	IV
(B)	II	V	I	IV	III
(C)	I	II	III	IV	V
(D)	V	II	I	III	IV

35. Following are the semiconductor Lasers

1) GaAs/GaAs
2) AlGaInP/GaAs
3) InGaAs P/InP
4) GaAlAs/GaAs

Arrange these in increasing order of emission wavelengths.

(A) 1, 2, 4, 3

(B) 2, 3, 4, 1

(C) 2, 4, 3, 1

(D) 2, 4, 1, 3

Q.No. (s) **36 to 45 :**

In the following questions, Match List – I and List – II and select the correct answer using the codes given the lists :

36.

List – I	**List – II**
a) Optical masking	1) Need for high temperature
b) CVD	2) Step coverage problem
c) PECVD	3) Pattern transfer
d) PVD	4) Use high radio frequency

Codes :

	a	**b**	**c**	**d**
(A)	4	3	1	2
(B)	1	3	2	4
(C)	3	1	4	2
(D)	3	4	2	1

37. **List – I** **List – II**

a) h_{21} 1) Reciprocal

b) 1 2) $\left.\frac{V_1}{V_2}\right|_{I_1=0}$

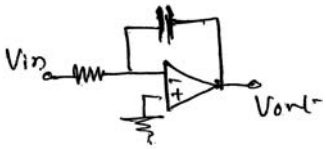
c) $h_{12} = -h_{21}$ 3) $\left.\frac{I_2}{I_1}\right|_{V_2=0}$

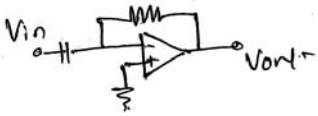
d) h_{12} 4) Symmetric

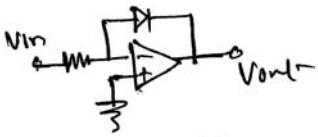
Codes :

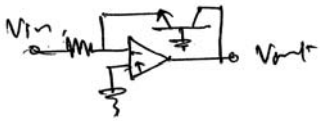
	a	b	c	d
(A)	3	2	1	4
(B)	4	1	2	3
(C)	3	1	2	4
(D)	3	4	1	2

38. **List – I** **List – II**

a) Differentiator 1) 

b) Integrator 2) 

c) Lag amplifier 3) 

d) Precision amplifier 4) 

Codes :

	a	b	c	d
(A)	2	1	4	3
(B)	1	2	4	3
(C)	2	1	3	4
(D)	4	1	2	3

39. **List – I** **List – II**

a) Flip flop can be used as latch i) J-K

b) Flip flop can be used as delayed ii) Master slave

c) Flip flop does not have race problem iii) D

d) Flip flop can be used as shift register iv) R-S

Codes :

	a	b	c	d
(A)	iv	iii	i	ii
(B)	iv	iii	ii	i
(C)	i	iv	iii	ii
(D)	iii	iv	ii	i

40. **List – I** **List – II**

a) TCON i) Contains status information

b) SBUF ii) Timer/counter control register

c) TMOD iii) Serial data buffer for T_x and R_x

d) PSW iv) Timer/counter modes of operation

Codes :

	a	b	c	d
(A)	iv	iii	ii	i
(B)	iii	ii	i	iv
(C)	ii	iv	iii	i
(D)	ii	iii	iv	i

41.

List – I	List – II
a) int a [4];	i) 4 bytes
b) float a [ ] = {1.1, 2.1, 3.5};	ii) 5 bytes
c) char a [ ] = "wxyz";	iii) 8 bytes
d) short a [ ] = {1, 2, 3, 4}	iv) 12 bytes

Codes :

	a	b	c	d
(A)	iii	iv	ii	i
(B)	ii	iii	iv	i
(C)	i	ii	iv	iii
(D)	i	ii	iii	iv

42.

List – I	List – II
a) Television	i) Either AM or FM is used
b) Radio	ii) Both AM and FM are used
c) Optical commn.	iii) Current modulation
d) Data commn.	iv) Digital system

Codes :

	a	b	c	d
(A)	ii	i	iv	iii
(B)	iv	ii	i	iii
(C)	ii	i	iii	iv
(D)	i	ii	iv	iii

43.

List – I	List – II
a) ASK	i) uses two frequencies mark and space
b) FSK	ii) baud rate is same as bit rate
c) BPSK	iii) on-off keying
d) QPSK	iv) baud rate is half of bit rate

Codes :

	a	b	c	d
(A)	iii	i	ii	iv
(B)	ii	iii	i	iv
(C)	iii	ii	i	iv
(D)	i	iv	ii	iii

44.

List – I	List – II
a) Silicon diode	i) High frequency application
b) Ge diode	ii) Very low reverse bias saturation current
c) LED	iii) Low forward bias voltage drop
d) PIN diode	iv) Class III – V compounds

Codes :

	a	b	c	d
(A)	iv	ii	i	iii
(B)	iii	ii	i	iv
(C)	ii	iii	iv	i
(D)	i	ii	iii	iv

45. **List – I** **List – II**

a) Electrical activity of the heart — i) EOG

b) Monitoring and diagnosis of brain — ii) EMG

c) Health of muscles and nerves — iii) EEG

d) Measuring the potential of human eye — iv) ECG

Codes :

	a	b	c	d
(A)	iii	iv	i	ii
(B)	ii	i	iii	iv
(C)	i	ii	iv	iii
(D)	iv	iii	ii	i

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

Glass is made by fusing mixtures of metal oxides, sulfides or selenides. The resulting material is a randomly connected molecular network rather than a well-defined ordered structure as found in crystalline materials. A consequence of this random order is that glasses do not have well-defined melting points. When glass is heated up from room temperature, it remains a hard solid up to several hundred degrees centigrade. As the temperature increases further, the glass gradually begins to soften until at very high temperatures it becomes a viscous liquid. The expression "melting temperature" is commonly used in glass manufacture. This term refers only to an extended temperature range in which the glass becomes fluid enough to free itself fairly quickly of gas bubbles.

The largest category of optically transparent glasses from which optical fibers are made consists of the oxide glasses. Of these the most common is silica (SiO_2), which has a refractive index of 1.458 at 850 nm. To produce

two similar materials having slightly different indices of refraction for the core and cladding, either fluorine or various oxides (referred to as *dopants*) such as B_2O_3, GeO_2, or P_2O_5 are added to the silica. The addition of GeO_2 or P_2O_5 increases the refractive index whereas doping the silica with fluorine or B_2O_3 decreases it.

46. P_2O_5 is used in glass fibers because

(A) P is a donor material

(B) It increases refractive index

(C) It forms excellent compound with SiO_2

(D) P replaces Si in the silica matrix

47. It is essential to remove gas bubbles from silica fiber to

(A) Increase the strength of optical fibers

(B) Decrease scattering loss

(C) Decrease absorption loss

(D) Reduce the chances of fiber breaking due to expansion of bubble at rising temperature

48. Silica glass fiber contain

(A) Oxides with sulphides

(B) Oxides with selenides

(C) Oxides of class III and V elements

(D) Oxides of class IV elements

49. Silica fiber material has following structure

(A) Hexagonal closed pack

(B) Tetrahedral

(C) Rhombic

(D) Amorphous

50. SiO_2 is used for glass fibers for following reason

(A) It has high refractive index of 1.458

(B) It is transparent and can be drawn into flexible thin fiber

(C) It has high melting point

(D) It is highly transparent at 850 nm

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Space for Rough Work