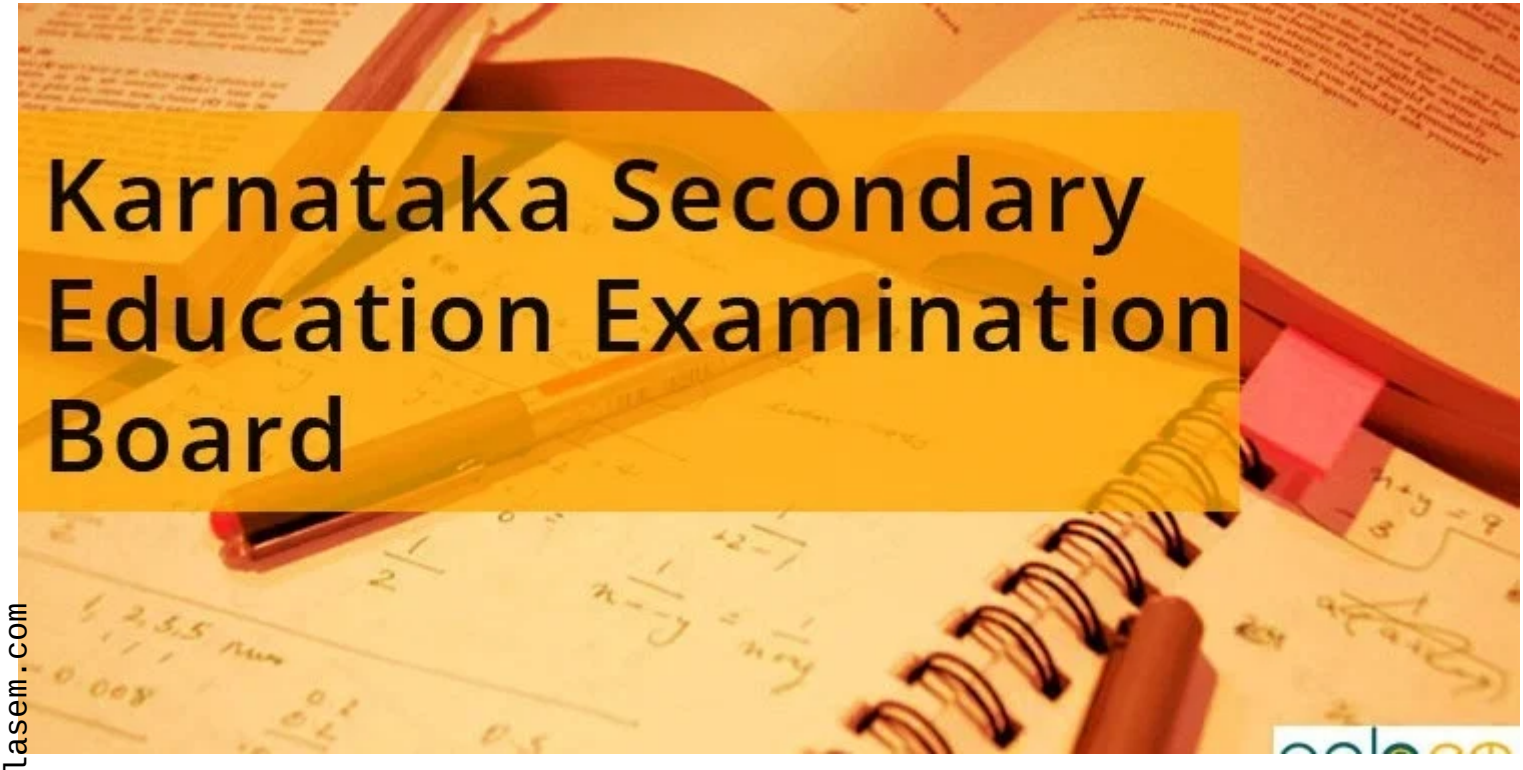
Question Paper 2022



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ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 8]
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ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 9]
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Question Paper Serial No. **101**

ಈ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯ ಕ್ರಮ ಸಂಖ್ಯೆ

ಸಂಕೇತ ಸಂಖ್ಯೆ : 73

Code No. : 73

ವಿಷಯ : ಎಲಿಮೆಂಟ್ಸ್ ಆಫ್ ಎಲೆಕ್ಟ್ರಾನಿಕ್ಸ್ ಇಂಜಿನಿಯರಿಂಗ್

Subject : ELEMENTS OF ELECTRONICS ENGINEERING

(ಶಾಲಾ ಅಭ್ಯರ್ಥಿ & ಪುನರಾವರ್ತಿತ ಶಾಲಾ ಅಭ್ಯರ್ಥಿ/ Regular Fresh & Regular Repeater)

ದಿನಾಂಕ : 01. 04. 2022] [Date : 01. 04. 2022

ಸಮಯ : ಬೆಳಗ್ಗೆ 10-30 ರಿಂದ ಮಧ್ಯಾಹ್ನ–1-45 ರವರೆಗೆ] [Time : 10-30 A.M. to 1-45 P.M.

ಪರಮಾವಧಿ ಅಂಕಗಳು : 90] [Max. Marks : 90

General Instructions to the Candidate :

1. This Question Paper consists of objective and subjective types of 9 questions.
2. This question paper has been sealed by reverse jacket. You have to cut on the right side to open the paper at the time of commencement of the examination. Check whether all the pages of the question paper are intact.
3. Follow the instructions given against both the objective and subjective types of questions.
4. Figures in the right hand margin indicate maximum marks.
5. The maximum time to answer the paper is given at the top of the question paper. It includes 15 minutes for reading the question paper.

TEAR HERE TO OPEN THE QUESTION PAPER
ಪ್ರಶ್ನೆ–ಪತ್ರಿಕೆಯನ್ನು–ತೆರೆಯಲು ಇಲ್ಲಿ ಕತ್ತರಿಸಿ

Tear here

Note : Answer *all* the questions.

1. Four alternatives are given for each of the following questions / incomplete statements. Select the most appropriate alternative and write it in the answer book along with its alphabet : 10 × 1 = 10

i) An integrated circuit is

(A) a complicated circuit

(B) an integrating device

(C) much costlier than transistor

(D) fabricated on a tiny silicon chip.

ii) Monolithic ICs are fabricated within a

(A) Soft stone (B) Single stone

(C) Silicon layer (D) Ceramic base.

iii) An ideal Op-Amp has

(A) zero R_o (B) high R_o

(C) finite A_v (D) finite R_i.

iv) An Op-Amp can be classified as

(A) low-r_{in} (B) linear

(C) positive feedback (D) RC-coupled.

v) The major component of a MOS IC is a/an

(A) FET (B) bipolar

(C) MOSFET (D) SCR.

vi) Monolithic technique is ideally suited for fabricating

(A) digital (B) thin-film

(C) thick-film (D) linear.

vii) Most important advantage of an IC is its

(A) easy replacement in case of circuit failure

(B) reduced cost

(C) low power consumption

(D) extremely high reliability.

viii) Op-Amps have become more popular in industry mainly because

(A) they are cheap

(B) their external characteristics can be changed to suit any application

(C) of their extremely small size

(D) they are available in different packages.

ix) In the context of IC fabrication, metallisation means

(A) connecting metallic wires

(B) depositing SiO_2 layer

(C) covering with a metallic cap

(D) forming interconnecting conduction pattern and bonding pads.

x) When in a negative scalar, both R_1 and R_f are reduced to zero, the circuit functions as

(A) integrator (B) subtractor

(C) unity follower (D) comparator.

2. a) Define the term IC. 2

b) Write the different applications of ICs. 3

c) Draw a neat circuit diagram of half-wave rectifier with its input and output wave forms. 5

3. a) List the advantages of monolithic ICs. 2

b) Give the classification of ICs. 3

c) Explain thick-film ICs. 5

4. a) Write the expansion form of VLSI. 2

b) List the drawbacks of ICs. 3

c) Write a short note on IC. 5

5. a) Classify ICs by their function. 2

b) Write three examples of linear ICs. 3

c) Explain linear integrated circuits. 5

OR

a) Write the expansion form of LSI. 2

b) Write the advantages of ICs. 3

c) Explain Hybrid *or* Multi chip ICs. 5

6. a) Name any two IC terminology. 2

b) Define the terms 'Etching' and 'Metallization'. 3

c) With a neat diagram, explain how monolithic ICs are made. 5

7. a) List any two components of ICs. 2

b) Draw a neat symbol of IC. 3

c) With a neat diagram, explain how transistor is fabricated in IC. 5

8. a) What is an Op-Amp ? 2

b) Write three examples of Op-Amp. 3

c) With a neat diagram explain the construction of MOS integrated circuits. 5

9. a) Draw a standard triangular symbol of Op-Amp. 2

b) Write the polarity conventions of Op-Amp. 3

c) With a neat circuit diagram, explain how Op-Amp can be used as an Adder or Summer. 5

OR

a) Write the symbol of Op-Amp with power supply terminals. 2

b) List the five terminals of Op-Amp. 3

c) Write the applications of Op-Amp. 5