14

Optional Paper Electronics & Telecommunication Engineering Paper – I

Time: 3 Hours

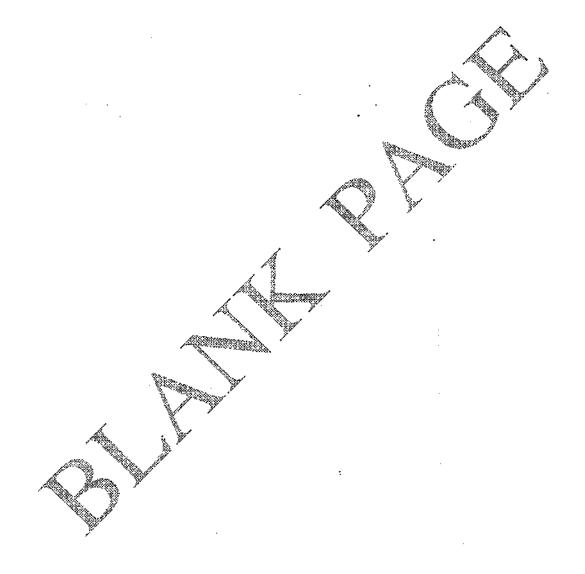
Maximum Marks: 200

IMPORTANT NOTES / महत्वपूर्ण निर्देश

- (A) Please fill up the OMR Sheet of this Question Answer Booklet properly before answering. Please also see the directions printed on the obverse before filling it. प्रश्नोत्तर पुस्तिका में प्रश्न हल करने से पूर्व उसके संलग्न ओ.एम.आर. पत्रक को भली प्रकार भर लें। उसे भरने हेतु उसके पृष्ठ भाग पर मुद्रित निर्देशों का अध्ययन कर लें।
- (B) The question paper has been divided into three Parts A, B and C. The number of questions to be attempted and their marks are indicated in each part. प्रश्न-पत्र अ, व और स तीन भागों में विभाजित है । प्रत्येक भाग में से किये जाने वाले प्रश्नों की संख्या और उनके अंक उस भाग में अंकित किये गये हैं ।
- (C) Attempt answers in English. उत्तर अंग्रेजी भाषा में दीजिये ।
- (D) Answers to all the questions of each part should be written continuously in the script and should not be mixed with those of other parts. In the event of candidate writing answers to a question in a part different to the one to which the question belongs, the question will not be assessed by the examiner.

 उत्तर पुस्तिका में प्रत्येक भाग के समस्त प्रश्नों के उत्तर क्रमबार देने चाहिये तथा एक भाग में दूसरे भाग के उत्तर नहीं मिलाने चाहिये । एक भाग में दूसरे भाग के प्रश्न के उत्तर लिखे जाने पर ऐसे प्रश्न को जाँचा नहीं जा सकता हैं ।
- (E) The candidates should not write the answers beyond the limit of words prescribed in parts A, B and C failing this the marks can be deducted. अभ्यर्थियों को भाग अ, ब और स में अपने उत्तर निर्धारित शब्दों की सीमा से अधिक नहीं लिखने चाहिये। इसका उल्लंघन करने पर अंक कार्ट जा सकते हैं।
- (F) In case the candidate makes any identification mark i.e. Roll No./Name/Telephone No./Mobile No. or any other marking either outside or inside the answer book, it would be treated as resorting to using unfair means. In such a case his candidature shall be rejected for the entire examination by the Commission.

 अध्यर्थी द्वारा उत्तर पुस्तिका के अंदर अथवा बाहर पहचान चिन्ह यथा रोल नम्बर / नाम / मोबाईल नम्बर / टेलीफोन नम्बर लिखे जाने या अन्य कोई निशान इत्यादि अंकित किये जाने को अनुचित साधन मान जायेगा। आयोग द्वारा ऐसा पाये जाने पर अध्यर्थी की सम्पूर्ण परीक्षा में अभ्यर्थिता रदद कर दी जायेगी।



Attempt all the twenty questions. Each question carries 2 marks. Answer should not exceed 15 words. Define acceptor atoms used in extrinsic semiconductors. Give the relation between number of added impurities to Zener potential in Zener diode. 3 Define α_{ac} for BJT.

Note:

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	What is forward and reverse blocking region in SCR operation?	
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	Define energy signal.	
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10	What is stable LTI system?	·
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11	State the maximum power transfer theorem.	
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12	For a two port network draw an equivalent netwo	ork using h parameters.
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Give the relation between Poisson's	s equation	and Lapiac	e equati	on.	
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16	Define infinite length transmission line.			
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17	What is wave front?			
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18	What is Gross error?			
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Attempt all the twelve questions. Each question carries 5 marks. Answer should

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(i) Frequency shift properties (ii) Time-Differentiation properties

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26 An LTI system is as follows:

Find the output for the given input (i) $X(t) = \delta(t)$, (II) $x(t) = \delta(t-T)$ (iii) $x(t) = \delta(t+T)$

(iv)
$$x(t) = \delta(t+5T)(v)$$
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Attempt any 5 questions. Each question carries 20 marks. Answer should not exceed

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36	(a) (b)	Descri What (i) (ii) (iii)	be a formation of standing wave pattern on a transmission line. happens to standing wave pattern, when Lossless line is terminated into its Zo. Losing line is terminated into its Zo. Line is terminated into short circuit load.
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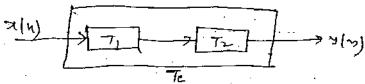
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Determine the response of the system 39 (a)

$$y(n) = \frac{5}{6}y(n-1) - \frac{1}{6}y(n-2) + x(n) \text{ to the input } x(n) = \delta(n) = \frac{1}{3}\delta(n-1)$$
Two systems are connected in cascade, prove that $Tc = T_1$. T_2 .

(b)



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