

Register Number :

Name of the Candidate :

0 1 1 6

B.E. DEGREE EXAMINATION, 2018

(COMMON TO ALL BRANCHES)

(FIRST SEMESTER)

SCLEC - 101. TECHNICAL ENGLISH - I

May]

[Time : 3 Hours

Maximum : 75 Marks

Answer ALL questions.

ALL questions carry EQUAL marks.

- 1 (a) What are the various barriers of communication ? (15)
(OR)
- (b) Write about styles in technical communication. (15)
2. (a) Write about the effective listening strategies. (15)
(OR)
- (b) What is team listening ? Explain about listening to seminars. (15)
3. (a) Write about stress and intonation. (15)
(OR)
- (b) Describe phonetics and Spoken English. (15)
4. (a) Write notes on : (15)
(i) Scanning. (ii) Skimming.
(OR)
- (b) Describe the five stages of SQ3R reading techniques. (15)
5. Define any FIVE of the following : (5 × 1 = 5)
(a) Petroleum. (b) Thermometer. (c) Transformer. (d) Chip. (e) Bit.
(f) Microphone. (g) Modem. (h) Computer graphics. (i) Floppy disk.
6. (a) Fill in the blanks of the following sentences with suitable prepositions: (4 × 1 = 4)
(i) She has been writing _____ 10 'O'clock.
(ii) He is out _____ danger.
(iii) He prefers coffee _____ tea.
(iv) Generally, I get up _____ 5 'O' clock
(OR)

(b) Fill in the blanks in the following sentences using the appropriate form of verbs given in brackets : (4 × 1 = 4)

Rice husk _____ (obtain) from rice mills. It _____ (produce) in such large quantity that its disposal becomes a problem. When it _____ (burn) under controlled temperature in a furnace it _____ (leave) a residue in the form of a highly reactive ash.

7. (a) Answer the following : (4 × 1 = 4)

- (i) He is constructing a building. (Change into Passive voice.)
- (ii) This is the school _____ I studied. (Fill in the blanks with Relative Pronoun)
- (iii) Barking dogs _____ bite. (Write the suitable adverb).
- (iv) Let us go. (Add a question tag.)

(OR)

(b) Transcribe the following words : (4 × 1 = 4)

- (i) Mother. (ii) Cup. (iii) Sing. (iv) Thirty.

8. Expand any TWO of the following : (2 × 1 = 2)

- (a) GST. (b) GMAT. (c) TOFEL. (d) VAT.

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B.E. DEGREE EXAMINATION, 2018

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(FIRST SEMESTER)

OOHS - 101. TECHNICAL ENGLISH - I

(Candidates joined during 2106-17 and after)

May]

[Time : 3 Hours

Maximum : 75 Marks

Answer ALL questions.

ALL questions carry EQUAL marks.

UNIT - I

1. (a) What are the various barriers to listening and explain how to overcome them ? (8)
(b) Comment the characteristics of listening. (7)
2. (a) Write about the types of listening. (8)
(b) Describe note making. (7)

UNIT - II

3. (a) Write the themes of the poem "Road Not Taken." (8)
(b) Consider "Ulysses" as a Dramatic Monologue. (7)
4. (a) Bring out the importance studies as in "Of Studies" by Bacon. (8)
(b) Sketch the character of Prof. Higgins in "Pygmalion." (7)

UNIT - III

5. (a) What are the things required by the candidate before attending interview ? (8)
(b) Discuss the strategies to be followed to attend Group Discussion. (7)
6. (a) Write about the presentation skills. (8)
(b) Write a dialogue between a customer and the bank manager for opening an account. (7)

UNIT - IV

7. (a) Assume yourself to be the purchase officer, write a letter inviting quotations to buy certain computer items. (8)

- (b) Write an email to your father to get money to pay the exam fees. (7)
8. (a) Describe Memorandum. (8)
- (b) Write a report on the fire accident in the Chemistry Lab. (7)

UNIT - V

9. (a) Answer the following as directed : (8)
- (i) She may see him tomorrow. (*Change into Passive voice.*)
- (ii) The thief was shot dead by the CBI. (*Change into Active voice.*)
- (iii) I reached. (*Add a question tag.*)
- (iv) He never swims. (*Add a question tag.*)
- (v) Expand the following :
- (A) RTI. (B) PTO.
- (vi) Write a single definition for the following :
- (A) Mother. (B) Assassination.
- (b) Write an essay on the present political scenario in Tamil Nadu. (7)

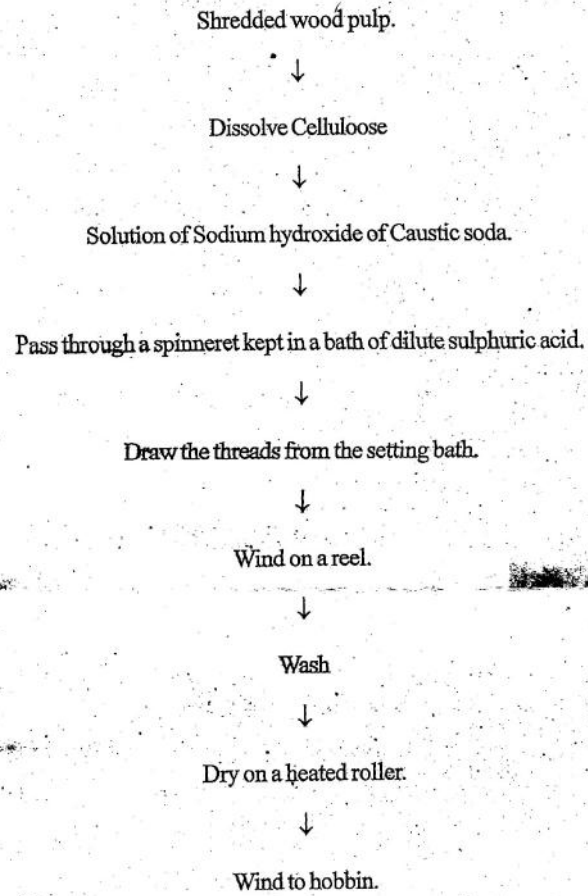
(OR)

10. (a) Answer the following as directed : (8)
- (i) Correct the errors in the following sentences :
- (A) Ten years are a long time to stay away from your family.
- (B) The boy with his dog are my brother.
- (C) It is an useful book.
- (D) There was a quarrel between all his three friends.
- (ii) Form sentences of your own :
- (A) At one's Finger tips. (B) Tooth and nail.
- (iii) Write a single definition for the following terms :
- (A) Mouse. (B) Sword.

(b) Interpret the following flow chart :

(7)

PROCESS OF MAKING RAYON



(RAYON – THE MAN MADE FIBRE)

B.E. DEGREE EXAMINATION, 2018

(COMMON TO ALL BRANCHES)

(FIRST SEMESTER)

OOBS - 103. APPLIED PHYSICS - I*(Candidates joined during 2016-17 and after)*

May]

[Time : 3 Hours

Maximum : 75 Marks .

*Answer any ONE FULL question from each unit.**ALL questions carry EQUAL marks.***UNIT - I**

- 1 (a) Describe with necessary theory the method of the Young's Modulus of the material of rectangular bar by uniform bending. (8)
- (b) Explain briefly different kinds of Elastic Modulus. (7)
2. (a) Derive Poiseuille's equation for the flow of a liquid through capillary tube. (8)
- (b) Using Stoke's law, deduce an expression for the terminal velocity of a spherical ball falling under gravity through viscous fluid. (7)

UNIT - II

3. (a) Explain the factors affecting acoustics of building and their remedies. (8)
- (b) Define absorption co-efficient and explain how it can be measured. (7)
4. (a) Explain the method of production of ultrasonic waves by piezo electric oscillator. (8)
- (b) Explain how ultrasonic waves are detected. (7)

UNIT - III

5. (a) Deduce an expression to find the thickness of a thin sheet using air wedge. (8)
- (b) Write short notes on dispersive power of prism and grating. (7)
6. (a) Explain the production of elliptically polarized light. (8)
- (b) Distinguish between isoclinic and isochromatic fringes. (7)

UNIT - IV

7. (a) What is packing factor ? Prove that the packing of HCP is 74 %. (8)
- (b) Calculate the atomic radius, co-ordination number and packing factor of FCC lattices. (7)

8. What is meant by crystal defect ? Describe in detail the point, line, surface and volume defect. (15)

UNIT - V

9. (a) Write short notes on general properties of nucleus. (7)
- (b) Describe a G.M. counter and explain its working as a particle detector. (8)
10. (a) Explain briefly about the construction and working breeder nuclear reactor with a suitable diagram. (8)
- (b) Write short notes on nuclear fission and fusion. (7)

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B.E. DEGREE EXAMINATION, 2018

(COMMON TO ALL BRANCHES)

(SECOND SEMESTER)

OOBS-201. ENGINEERING MATHEMATICS - II

(For the candidates joined from 2016-17 and after)

May]

[Time : 3 Hours

Maximum : 75 Marks

Answer any ONE FULL question from each unit.

ALL questions carry EQUAL marks..

UNIT - I

1. (a) Solve : $\frac{d^2y}{dx^2} - 4y = x \sin hx.$

(b) Solve : $\frac{dx}{dt} + 2y = e^t, \frac{dy}{dt} - 2x = e^{-t}.$

2. (a) Solve by the method of variation of parameters $\frac{d^2y}{dx^2} - 2\frac{dy}{dx} + 2y = e^x \tan x.$

(b) Solve : $x^2 \frac{d^2y}{dx^2} + 2x \frac{dy}{dx} - 12y = x^3 \log_e x.$

UNIT - II

3. (a) Show that $\vec{F} = (2xy + z^3)\hat{i} + x^2z\hat{j} + 3xz^2\hat{k}$ is conservative and hence, find the scalar potential.

(b) If ϕ and ψ satisfy Laplace equation, prove that the vector $(\phi \nabla \psi - \psi \nabla \phi)$ is solenoidal.

4. (a) In what direction from (3, 1, -2) is the directional derivative of $\phi = x^2y^2z^4$ maximum? Find also, the magnitude of the maximum.

(b) Prove that : $\nabla^2 (r^n) = n(n+1)r^{n-2}$.

UNIT - III

5. (a) Evaluate the line integral $\int_C (y^2 dx - x^2 dy)$ around the triangle whose vertices are (1, 0), (0, 1) (-1, 0) in the positive sense.

(b) Evaluate: $\iint_S \vec{F} \cdot \hat{n} ds$ where $\vec{F} = (2x^2 - 3z) \hat{i} + 2y \hat{j} - 4xz \hat{k}$ where S is surface of the solid bounded by the planes $x = 0, y = 0, z = 0$ and $2x + 2y + z = 4$.

6. Verify the divergence theorem for $\vec{F} = 2xy \hat{i} + yz^2 \hat{j} + xz \hat{k}$ where S is the rectangular parallopiped bounded by $x = 0, y = 0, z = 0, x = 2, y = 1, z = 3$.

UNIT - IV

7. (a) If $w = f(z)$ is analytic, prove that $\frac{dw}{dz} = \frac{\partial w}{\partial x} - i \frac{\partial w}{\partial y}$ where $z = x + iy$ and hence,

prove that $\frac{\partial^2 w}{\partial z \partial \bar{z}} = 0$.

(b) Find the analytic function $f(z) = u + iv$ if $U - V = (x - y) = (x^2 + 4xy + y^2)$.

8. (a) If $w = f(z)$ is a regular function of z , prove that $\left(\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2} \right) \log_e |f(z)| = 0$.

(b) Find the image of the rectangular region $1 \leq x \leq 2, 0 \leq y \leq \pi$, under the mapping $w = e^z$.

UNIT - V

9. (a) Evaluate $\int_C z^2 dz$ where C is the arc from A(1, 1) to B(2, 4) along $y = x^2$.

(b) Determine the poles and their orders for the function $f(z) = \frac{z+2}{(z+1)^2(z-2)}$ and hence, find the residues at the poles.

10. (a) Find the Taylor's series to represent the function $\frac{z^2 - 1}{(z+2)(z+3)}$ in $|z| < 2$

(b) Using Contour integration, evaluate : $\int_0^{2\pi} \frac{d\theta}{17 - 8 \cos \theta}$

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B.E. DEGREE EXAMINATION, 2018

(COMMON TO ALL BRANCHES)

(SECOND SEMESTER)

205. BASIC ENGINEERING

May]

[Time : 3 Hours

Maximum : 75 Marks

Answer any ONE FULL question from each unit.

ALL questions carry EQUAL marks.

PART - A

(CIVIL ENGINEERING)

(25)

UNIT - I

1. (a) Name the different types of cement and write the ingredients of concrete. (6)
- (b) Write the uses of stones in building construction and name the three commercial forms of steel section. (7)

(OR)

2. (a) State the requirements of a good foundation and list out the different types foundations. (7)
- (b) Explain the following : (6)
- (i) Beams. (ii) Columns. (iii) Lintels.

UNIT - II

3. (a) Define surveying and name the accessories used in chain surveying with sketches. (6)
- (b) Write short notes on : (6)
- (i) Bearings. (ii) Height of collimation. (iii) Bench mark.

(OR)

4. (a) Write the classification of bridges and components of a bridge. (6)
- (b) List the purposes of reservoir and write the important points in the selection of reservoir site. (6)

PART - B*(MECHANICAL ENGINEERING)*

(25)

UNIT - III

5. (a) With sketch, explain the working of any one water tube boiler. (7)
 (b) Discuss in detail the working of impulse turbine. (6)
 (OR)
6. Explain the working principle of
 (a) Two stroke petrol engine and (b) Four stroke diesel engine. (6 + 7)

UNIT - IV

- 7 (a) Explain the working of a drilling machine with neat sketch. (6)
 (b) Define extrusion and explain direct extrusion with diagram. (6)
 (OR)
8. Define welding. Explain gas welding process. Also, discuss about the different types of flames in gas welding. (12)

PART - C*(ELECTRICAL AND ELECTRONICS ENGINEERING)*

(25)

UNIT - V

9. An alternating voltage is given by $V = 230 \sin 314 t$. Calculate :
 (a) Frequency. (b) Maximum value. (c) Average value. (d) RMS value. (13)
 (OR)
10. Explain the different types of D.C motors with neat sketch. (13)

UNIT - VI

11. Describe the working of a PN junction diode with neat diagrams. Also, explain its V-I characteristics. (12)
 (OR)
12. Explain the working of the CB configuration of a BJT. (12)

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B.E. DEGREE EXAMINATION, 2018

(COMMON TO ALL BRANCHES)

(SECOND SEMESTER)

SCLEC - 206. ENVIRONMENTAL STUDIES

May]

[Time : 3 Hours

Maximum : 75 Marks

*Answer ONE FULL question from each unit.
ALL questions carry EQUAL marks.*

UNIT - I

- 1 Explain in detail about forest and mineral resources. (15)
2. Explain the role of an engineer in conservation of natural resources and also, for sustainable development. (15)

UNIT - II

3. Describe the characteristic features, structures and functions of forest conservation. (15)
4. (a) What is food chain ? How it is important to a Nation. (9)
(b) Discuss the importance of aquatic system. (6)

UNIT - III

5. What do you mean by hot spots in biodiversity ? Briefly explain the any two hot spots of biodiversity in India. (15)
6. Explain *in-situ* and *ex-situ* conservation alongwith thier merits and limitations. (15)

UNIT - IV

7. Explain the role of an individual in prevention of pollution and in disaster management with suitable recent case study. (15)
8. What is noise ? What is the unit measurement with examples, discuss the effects of noise pollution. (15)

UNIT - V

9. (a) Explain the role of IT in protection of environment and human health. (8)
(b) Discuss the causes and effects of global warming. (7)
10. (a) Discuss the various family welfare programmes. (9)
(b) Discuss the problems affecting the women and child welfare. (6)