



First Semester B.E. Degree Examination, Dec.2019/Jan.2020

Calculus and Linear Algebra

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1. a. With usual notations prove that $\tan \phi = r \left(\frac{d\theta}{dr} \right)$. (06 Marks)
- b. Find the angle between the curves $r = \sin\theta + \cos\theta$ and $r = 2 \sin\theta$ (06 Marks)
- c. Show that the radius of curvature for the catenary of uniform strength $y = a \log \sec \left(\frac{x}{a} \right)$ is $a \sec(x/a)$. (08 Marks)

OR

2. a. Show that the pairs of curves $r = a(1 + \cos\theta)$ and $r = b(1-\cos\theta)$ intersect each other Orthogonally. (06 Marks)
- b. Find the pedal equation of the curve $r^n = a^n \cos n\theta$. (06 Marks)
- c. Show that the evolute of $y^2 = 4ax$ is $27ay^2 = 4(x+a)^3$. (08 Marks)

Module-2

3. a. Find the Maclaurin's series for $\tan x$ up to the term x^4 . (06 Marks)
- b. Evaluate $\lim_{x \rightarrow 0} \left[\frac{a^x + b^x + c^x}{3} \right]^{1/x}$ (07 Marks)
- c. If $U = f(x-y, y-z, z-x)$, prove that $\frac{\partial U}{\partial x} + \frac{\partial U}{\partial y} + \frac{\partial U}{\partial z} = 0$ (07 Marks)

OR

4. a. Expand $\log(\sec x)$ upto the term containing x^4 using Maclaurin's series. (06 Marks)
- b. Find the extreme values of the function $f(x, y) = x^3 + y^3 - 3x - 12y + 20$. (07 Marks)
- c. Find $\frac{\partial(u, v, w)}{\partial(x, y, z)}$ where $u = x^2 + y^2 + z^2$, $v = xy + yz + zx$, $w = x + y + z$. (07 Marks)

Module-3

5. a. Evaluate $\int_0^1 \int_0^{\sqrt{1-x^2}} \int_0^{\sqrt{1-x^2-y^2}} xyz \, dz \, dy \, dx$ (06 Marks)
- b. Evaluate $\int_{-2}^2 \int_0^{2\sqrt{4-x^2}} (2-x) \, dy \, dx$ by changing the order of integration. (07 Marks)
- c. Prove that $\beta(m, n) = \frac{|(m)| \cdot |(n)|}{|(m+n)|}$ (07 Marks)

OR

- 6 a. Evaluate $\iint y dx dy$ over the region bounded by the first quadrant of the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$. (06 Marks)
- b. Find by double integration the area enclosed by the curve $r = a(1 + \cos\theta)$ between $\theta = 0$ and $\theta = \pi$. (07 Marks)
- c. Show that $\int_0^{\pi/2} \frac{d\theta}{\sqrt{\sin\theta}} \times \int_0^{\pi/2} \sqrt{\sin\theta} d\theta = \pi$. (07 Marks)

Module-4

- 7 a. Solve $\frac{dy}{dx} + \frac{y \cos x + \sin y + y}{\sin x + x \cos y + x} = 0$ (06 Marks)
- b. Solve $r \sin\theta - \cos\theta \frac{dr}{d\theta} = r^2$ (07 Marks)
- c. A series circuit with resistance R, inductance L and electromotive force E is governed by the differential equation $L \frac{di}{dt} + Ri = E$, where L and R are constants and initially the current i is zero. Find the current at any time t. (07 Marks)

OR

- 8 a. Solve $(4xy + 3y^2 - x)dx + x(x + 2y)dy = 0$. (06 Marks)
- b. Find the orthogonal trajectories of the family of parabolas $y^2 = 4ax$. (07 Marks)
- c. Solve $p^2 + 2py \cot x = y^2$. (07 Marks)

Module-5

- 9 a. Find the rank of $\begin{bmatrix} 1 & 2 & 3 & 2 \\ 2 & 3 & 5 & 1 \\ 1 & 3 & 4 & 5 \end{bmatrix}$ by elementary row transformations. (06 Marks)
- b. Apply Gauss-Jordan method to solve the system of equations
 $2x_1 + x_2 + 3x_3 = 1$,
 $4x_1 + 4x_2 + 7x_3 = 1$,
 $2x_1 + 5x_2 + 9x_3 = 3$. (07 Marks)
- c. Find the largest Eigen value and the corresponding Eigen vector of the matrix
 $A = \begin{bmatrix} 2 & 0 & 1 \\ 0 & 2 & 0 \\ 1 & 0 & 2 \end{bmatrix}$ by power method. Using initial vector $(100)^T$. (07 Marks)

OR

- 10 a. Solve by Gauss elimination method
 $x - 2y + 3z = 2$,
 $3x - y + 4z = 4$,
 $2x + y - 2z = 5$ (06 Marks)
- b. Solve the system of equations by Gauss-Seidal method
 $20x + y - 2z = 17$,
 $3x + 20y - z = -18$,
 $2x - 3y + 20z = 25$ (07 Marks)
- c. Reduce the matrix $A = \begin{bmatrix} -1 & 3 \\ -2 & 4 \end{bmatrix}$ to the diagonal form. (07 Marks)

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First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
Basic Electrical Engineering

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. State Ohm's Law. Mention its limitations. (06 Marks)
 b. Find E_1 , E_2 and I when the power dissipated in the 5Ω resistor is $125W$. (Ref. Fig. Q1(b)). (07 Marks)

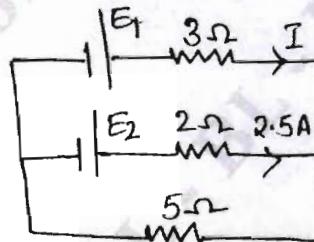


Fig.Q1(b)

- c. Define RMS value of alternating current, show that its value is proportional to maximum value. (07 Marks)

OR

- 2 a. Two 12V batteries with internal resistances 0.2Ω and 0.25Ω respectively are joined in parallel and a resistance of 1Ω is placed across the terminals. Find the current supplied by each battery. (07 Marks)
 b. The equation for an AC voltage is given as $V = 0.04\sin(2000t + 60^\circ)V$. Determine the frequency, the angular frequency, instantaneous voltage when $t = 160\mu s$. What is the time represented by a 60° phase angle. (06 Marks)
 c. Explain the generation of 1ϕ AC induced emf with suitable diagram. (07 Marks)

Module-2

- 3 a. Show that in a pure inductor the current lags behind the voltage by 90° . Also draw the voltage and current waveforms. (06 Marks)
 b. Given $V = 200 \sin 377$ volts and $i = 8 \sin(377t - 30^\circ)$ Amps for an AC circuit, determine :
 i) Power factor ii) True power iii) Apparent power iv) Reactive power indicate the unit of power calculated. (08 Marks)
 c. 3 similar coils each having resistance of 10Ω and reactance of 8Ω are connected in star across $400V$, 3ϕ supply. Determine : i) Line current ii) Total power iii) Reading of each of the two wattmeters connected to measure power. (06 Marks)

OR

- 4 a. Show that the power in a balanced 3ϕ star connected circuit can be measured by 2 Wattmeter. Draw the circuit and vector diagram. (08 Marks)
 b. Three coils each of impedance $20\angle 60^\circ \Omega$ are connected in star to 3ϕ $400V$, $50Hz$ supply. Find the reading on each of the 2 wattmeters connected to measure the power input. (08 Marks)
 c. What is meant by power factor in AC circuits? What is its significance in AC circuits? (04 Marks)

Module-3

- 5 a. Derive an emf equation of transformer with usual notation. (06 Marks)
 b. Explain the 2 way control and 3 way control of lamp with suitable circuit diagram and working table. (06 Marks)
 c. A 40KVA, 1 ϕ transformer has core loss of 450W and full load copper loss 850Watts. If the power factor of the load is 0.8. Calculate :
 i) Full load efficiency
 ii) Maximum efficiency at UPF
 iii) Load for maximum efficiency. (08 Marks)

OR

- 6 a. List different types of loss in a transformer and explain each one in brief. (06 Marks)
 b. What is Earthing? Why earthing is required? With the help of sketch explain plate earthing. (08 Marks)
 c. Write a short note :
 i) MCB
 ii) Precautions againsts electric shock. (06 Marks)

Module-4

- 7 a. With a neat sketch, explain the construction of the various parts of DC generator. (08 Marks)
 b. Explain the significance of back emf in a DC motor. (06 Marks)
 c. A shunt wound DC generator delivers 496A at 440V to load. The resistance of the shunt field coil is 110Ω and that of armature winding is 0.02Ω . Calculate the emf induced in the armature. (06 Marks)

OR

- 8 a. Derive the torque equation of DC motor with usual notation. (06 Marks)
 b. A 6 pole lap-connected DC series motor with 844 conductors takes current of 110A at 480V. The armature resistance and the series field resistance are 0.8Ω and 0.02Ω respectively. The flux per pole is 50mwb. Calculate :
 i) The speed ii) The gross torque. (07 Marks)
 c. Derive emf equation of a DC generator. (07 Marks)

Module-5

- 9 a. Derive the emf equation of synchronous generator. (06 Marks)
 b. With a circuit diagram, explain the working of star-delta starter for a 3 ϕ induction motor. (07 Marks)
 c. A 12 pole, 3 ϕ alternator is coupled to an engine running at 500rpm. It supplies an induction motor which has a full load speed of 1440rpm. Find the percentage slip and the number of poles of the motor. (07 Marks)

OR

- 10 a. Explain the concept of rotating magnetic field and show that resultant flux remains same at different instants of time. (07 Marks)
 b. A 3 ϕ , 50Hz, 20pole, salient pole alternator with Y-connected stator winding has 180 slots on the stator. There are 8 conductors per slot and the coils are full-pitched. The fluxes per pole is 25mwb. Assuming sinusoidally distributed flux, calculate :
 i) Speed ii) Generated emf per phase iii) Line emf. (07 Marks)
 c. Describe the constructional features of synchronous generator with suitable diagram. (06 Marks)

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 b. Explain the 2 way control and 3 way control of lamp with suitable circuit diagram and working table. (06 Marks)
 c. A 40KVA, 1φ transformer has core loss of 450W and full load copper loss 850Watts. If the power factor of the load is 0.8. Calculate :
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 c. A shunt wound DC generator delivers 496A at 440V to load. The resistance of the shunt field coil is 110Ω and that of armature winding is 0.02Ω . Calculate the emf induced in the armature. (06 Marks)

OR

- 8 a. Derive the torque equation of DC motor with usual notations. (06 Marks)
 b. A 6 pole lap connected DC series motor with 86 conductors takes a current of 110A at 80V. The armature resistance and the series field resistance are 0.1Ω and 0.02Ω respectively. The flux per pole is 50mwb. Calculate :
 i) The speed ii) The gross torque. (07 Marks)
 c. Derive emf equation of a DC generator. (07 Marks)

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OR

- 10 a. Explain the concept of rotating magnetic field and show that resultant flux remains same at different instants of time. (07 Marks)
 b. A 3φ, 50Hz, 20pole, salient pole alternator with Y-connected stator winding has 180 slots on the stator. There are 8 conductors per slot and the coils are full-pitched. The fluxes per pole is 25mwb. Assuming sinusoidally distributed flux, calculate :
 i) Speed ii) Generated emf per phase iii) Line emf. (07 Marks)
 c. Describe the constructional features of synchronous generator with suitable diagram. (06 Marks)

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First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020 Engineering Chemistry

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1. a. Define Free Energy. Derive Nernst equation for single electrode potential. (07 Marks)
- b. What are Reference Electrodes? Describe the construction and working of Calomel electrode. (06 Marks)
- c. Explain the construction and working of Ni – Metal Hydride battery. Give the reaction during charging and discharging mode. Give any two applications. (07 Marks)

OR

2. a. Describe the construction and working of Lithium – ion battery. Give its applications. (07 Marks)
- b. Write a note on Primary , Secondary and Reserve batteries. (06 Marks)
- c. What are Concentration Cells? EMF of the cell $\text{Ag}/\text{AgNO}_3(\text{C}_1) // \text{AgNO}_3 (\text{C}_2 = 0.2\text{m})/\text{Ag}$ is 0.8V. Calculate C_1 of the cell. (07 Marks)

Module-2

3. a. What is Corrosion? Explain the Electrochemical theory of corrosion by taking iron as an example. (07 Marks)
- b. Explain i) Differential Metal Corrosion ii) Pitting Corrosion. (07 Marks)
- c. What do you mean by metal finishing? Mention any five technological importances. (06 Marks)

OR

4. a. Define and explain any two terms :
i) Polarisation ii) Decomposition potential iii) Over voltage. (06 Marks)
- b. What is Electroless Plating? Explain the Electroless plating of copper. (07 Marks)
- c. Explain the process of Galvanization. (07 Marks)

Module-3

5. a. What is Knocking? Explain the mechanism. (07 Marks)
- b. On burning 0.96 grams of solid fuel in bomb calorimeter the temperature of 3500 grams of water increased by 2.7°C water equivalent of calorimeter and latent heat of steam are 385 grams and 587 cal/gram respectively. If the fuel contains 5% H_2 , calculate its gross and net calorific value. Specific heat of water = 4.187 kJ/kg K. (06 Marks)
- c. What are Fuel Cells? Describe the construction and working of $\text{CH}_3\text{OH} - \text{O}_2$ fuel cell. (07 Marks)

OR

6. a. What are Solar Cells? Explain the construction and working of a typical P.V. Cell. (07 Marks)
- b. Explain the production of solar grade Si by Union Carbide Process. (07 Marks)
- c. Write a note on : i) Power alcohol ii) Unleaded petrol. (06 Marks)

Module-4

- 7 a. What are the main sources, effects and control of lead pollution? (07 Marks)
 b. Mention the various causes, effects and disposal methods of e – waste. (07 Marks)
 c. 50 mL of an industrial sewage has consumed 11.5 mL of 0.4N $K_2Cr_2O_7$ solution for complete oxidation. Calculate C.O.D of industrial sewage. (06 Marks)

OR

- 8 a. Explain the activated sludge treatment of sewage water. (07 Marks)
 b. What is Desalination? Describe the desalination of seawater by reverse Osmosis process. (07 Marks)
 c. Write a note on Ozone depletion. (06 Marks)

Module-5

- 9 a. Explain the theory, Instrumentation and Application of Calorimetry. (06 Marks)
 b. What is Potentiometric titration? Explain the principle involved in Potentiometric titration. (07 Marks)
 c. Write a note on Fullerene. Mention its application. (07 Marks)

OR

- 10 a. What are Nano – materials? Give their synthesis by Sol – gel techniques. (07 Marks)
 b. Write a note on Graphenes. Mention their applications. (07 Marks)
 c. Explain the theory and applications of Atomic Absorption Spectroscopy. (06 Marks)

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First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
Engineering Chemistry

Time: 3 hrs.

Max. Marks: 100

Note: Answer **FIVE** full questions, selecting **ONE** full question from each module.

Module – 1

- 1**

 - a. Derive the Nernst equation for single electrode. (05 Marks)
 - b. Explain the construction and working of Calomel electrode. (05 Marks)
 - c. Explain the following battery characteristics : (i) Cycle life (ii) Shelf life (iii) Energy efficiency. (05 Marks)
 - d. Explain the working Li-ion battery and its advantages. (05 Marks)

2

 - a. What are concentration cells? Derive an expression for electrolyte concentration cells. (05 Marks)
 - b. Explain the construction and working of glass electrode. (05 Marks)
 - c. Describe the construction and working of nickel – metal hydride battery. (05 Marks)
 - d. Explain the construction of methanol oxygen fuel cell. (05 Marks)

Module – 2

- 3**

 - a. Explain the electrochemical theory of corrosion with respect to iron. (05 Marks)
 - b. Explain the sacrificial anodic protection and impressed current cathodic protection method of iron metal. (05 Marks)
 - c. Define the term metal finishing. Mention the technological importance of metal finishing. (05 Marks)
 - d. Define the term electroplating. Describe the electroplating of chromium. (05 Marks)

4

 - a. What is meant by differential aeration corrosion? Explain pitting corrosion. (05 Marks)
 - b. Explain the following factors influence the rate of corrosion (i) anodic and cathodic areas
(ii) Nature of corrosion product. (05 Marks)
 - c. What is anodic metal coating? Describe galvanizing of iron. (05 Marks)
 - d. What is electroless plating? Describe the method of electroless plating of copper. (05 Marks)

Module – 3

- 5 a. Explain the fluidized bed catalytic cracking process with neat diagram. (05 Marks)

b. What is knocking in IC engine? Explain the mechanism of knocking in chemical terms. (05 Marks)

c. What are photovoltaic cells? Explain the construction and working of photovoltaic cells. (05 Marks)

d. 0.85 g of coal sample (Carbon 90%, H₂ 5% and ash 5%) was subjected to combustion in a bomb calorimeter. Mass of water taken in the calorimeter was 2000 g and the water equivalent of calorimeter was 600 g. The rise in temperature was 3.5°C. Calculate GCV and NCV of coal sample. Latent heat of condensed steam = 587 cal/gm. (05 Marks)

- 6** a. What is reforming of petrol? Mention any three reactions involved in reforming process. (05 Marks)
- b. Explain the following : (i) Bio-diesel (ii) Cetane number (05 Marks)
- c. What is power alcohol? Mention its advantages. (05 Marks)
- d. Explain the method of producing solar grade silicon by union carbide method. (05 Marks)

Module – 4

- 7** a. Explain the mechanism of addition polymerization of vinyl chloride. (05 Marks)
- b. Explain the term glass transition temperature. Explain any two factors that influence the glass transition temperature. (05 Marks)
- c. Describe the manufacture of the following polymers and mention their uses:
 (i) Poly methyl methacrylate (ii) Teflon. (05 Marks)
- d. Explain the mechanism of conduction in polyaniline. (05 Marks)
- 8** a. A polymer sample containing 100, 200 and 300 molecules having molecular mass 10^3 , 10^4 and 10^5 respectively. Calculate number average and weight average molecular mass of polymer. (05 Marks)
- b. What are elastomers? Explain the synthesis and applications of silicone rubber. (05 Marks)
- c. What are adhesives? Explain the synthesis and application of epoxy resins. (05 Marks)
- d. Give the synthesis and applications of Kevlar fibre. (05 Marks)

Module – 5

- 9** a. Explain the formation of scales and sludges formed in boilers. (05 Marks)
- b. Write a note on boiler corrosion. (05 Marks)
- c. Explain the synthesis of carbon nano tubes by chemical vapour deposition method. (05 Marks)
- d. Write short note on fullerenes. (05 Marks)
- 10** a. Define the following terms: (i) BOD (ii) COD (05 Marks)
- b. Describe the method of desalination of water by reverse osmosis. (05 Marks)
- c. Explain the synthesis of carbon nanotubes by Sol-Gel process. (05 Marks)
- d. Write a note on Nano crystals and Nano clusters. (05 Marks)

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**First Semester B.E Degree Examination, Dec.2019/Jan.2020
Technical English – I****(COMMON TO ALL BRANCHES)**

Time: 3 hrs.]

[Max. Marks: 100]

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **hundred** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

-
1. Which of these element is not involved in the process of communication
a) Pipe b) Sender c) Message d) Channel
 2. Communication refers to an exchange of
a) Information b) Ideas c) Emotions d) All of these
 3. An informal flow of communication exists in the organization. It is
a) Grapes b) Grapevine c) Grapewine d) Water
 4. Intrapersonal Communication implies
a) Takes places with self b) Takes place with others
c) Takes place with animals d) Takes place with mothers
 5. Interpersonal Communication is also called
a) Dyadic b) Virtual reality
c) Mass Communication d) Public speaking
 6. Communication is a non-stop
a) Process b) Programme c) Plan d) Paper
 7. Our dress code is an example of
a) Non Verbal b) Verbal c) Written d) Spoken
 8. Extra personal communication takes place with
a) Animals b) Dolls c) Books d) Plants

9. Badly coded messages confuse the receiver
 a) True b) False c) Never d) We do not know
10. The building block of communication is
 a) Listening b) Singing c) Dancing d) Thinking
11. Communication that moves from bottom to top is
 a) Cross wise b) Downward c) Upward d) Horizontal
12. Written communication is important in an organization
 a) It has a legal status b) It can be thrown away
 c) People do not read d) Writing is boring
13. Which of the following is a oral communication
 a) Dictation b) Email c) Notice d) Letters
14. No communication is complete without
 a) Noise b) Feedback c) Sleep d) Yawn
15. The common barriers to communication in an organization is
 a) Listening barrier b) Language c) Cultural barrier d) All of these

Name the parts of speech which are underlined: (Q.No.16 to Q.No.20)

16. He walked around the park.
 a) Noun b) Preposition c) Verb d) Conjunction
17. She eat a trawberry ice cream.
 a) Noun b) Verb c) Interjection d) Adverb
18. Older people have less energy.
 a) Verb b) Adjective c) Adverb d) Noun
19. My sister answered quietly.
 a) Noun b) Conjunction c) Verb d) adverb
20. I like chips and cake.
 a) Noun b) Conjunction c) Adverb d) Verb

Choose the correct option (phonetics): (Q.No.21 to Q.No.26)

21. Which of these terms refer to the study of speech process?
 a) Phonology b) Phonetic substance
 c) Phonetics d) Semantics
22. Which is not a type of phonetics?
 a) Articulatory b) Acoustic c) Personal d) Auditory

23. What is the full form of IPA?
a) Indian Phonetic Alphabet b) International Phonetic Alphabet
c) Indian Phonetic Agreement d) Indian People Alphabet

24. What is the phonetic transcription of “reach”?
a) [ra:tʃ] b) reah c) [ri:rʃ] d) [rətʃ]

25. The word plastic has (plas-tic)
a) 2 syllables with stress on one b) 2 syllables with stress on both
c) 2 syllables with no stress d) 3 syllables with stress on the third

26. The syllable structure for the word “PLANT”
a) CCVC b) CCCC c) CVVVV d) VVVV

Mark the compound noun: (Q.No27 to Q.No.30)

27. A lot of old students came to the alumini meet
a) old students b) Lot c) Meet d) Came

28. Her strength is amazing. (abstract noun)
a) Her b) Strength c) Was d) Amazing

29. I need the information about the college (which is unaccountable noun)
a) I b) Information c) College d) Need

30. Most kids like a play in the Mate. (I identify the noun)
a) Unaccountable b) Countable c) Abstract d) Live

Point out the underlined nouns are common, proper, collective, abstract: (Q.No.31 to Q.No.35)

31. You must speak the truth.
a) Collective noun b) Proper c) Abstract d) Common

32. He gave me a bunch of grapes.
a) Proper b) Common c) Collective d) Abstract

33. Priya is my younger sister.
a) Proper b) Common c) Collective d) Abstract

34. The Lion is the king of beasts.
a) Proper b) Common c) Collective d) Abstract

35. He owns a fleet of cars.
a) Proper b) Common c) Collective d) Abstract

Silent and non silent words. Select the missing or silent letters: (Q.No.36 to Q.No.41)

36. a k nife.
a) k b) b c) x d) z

37. _____ rong.
a) X b) C c) W d) F

38. _____ sychology.
a) p b) b c) t d) k

39. I always _____ in class.
a) lisen b) list c) listn d) listen

40. The leaves fell in _____.
a) Autumn b) autum c) atum d) atom

41. Do you have a _____.
a) doubt b) dot c) dout d) drought

Find the Homophones which are right: (Q.No.42 to Q.No.46)

42. You might see a **grizzly** _____ in the forest.
a) bear b) bare c) boot d) boo

43. Hey, who _____ the pizza?
a) ate b) eight c) eat d) eated

44. My mother says, I must not _____ my brothers.
a) tease b) teas c) tees d) taste

45. _____ is my favourite colour.
a) blue b) blew c) blu d) blow

46. He feels a little _____ after his illness.
a) weak b) week c) wak d) wake

Choose the right articles: (Q.No.47 to Q.No.51)

47. Sarala lives in _____ one bed room house.
a) an b) a c) the d) no article

48. The test result will be available in _____ hour.
a) a b) an c) the d) no article

49. _____ old friend of mine came today.
a) a b) an c) the d) no article

50. We are running out of _____ water. We need to buy a bottle.
a) a b) an c) the d) no article

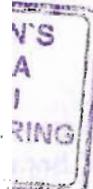
51. _____ Mexico is a beautiful country.
a) a b) an c) the d) no article

Choose speech of sound : (Q.No.52 to Q.No.53)

52. Which has the sound / i:/
a) see b) it c) fill d) money

53. RP is called
a) Received Pronunciation b) Retotalled pronunciation
c) Received pages d) Received sounds

Prepositional phrases – Choose the right one: (Q.No.54 to Q.No.65)



Question tags: (Q.No.66 to Q.No.72)

66. Give an example,
a) will you b) won't you c) can you d) do you
67. Let's go to the party,
a) shall we b) shan't we c) should we d) do we
68. Gopal was never been to Gao,
a) was he? b) does he? c) hasn't he? d) will he?
69. You were at home,
a) weren't you b) are you c) do you d) had you
70. She is an American,
a) isn't she? b) is she? c) not she d) won't she
71. We must watch the movies,
a) shouldn't we b) mustn't we c) do they d) mustn't they
72. I am beautiful,
a) aren't I b) are I c) Is there d) am I not

73. Synonyms: (Q.No.73 to Q.No.82)
Accept
a) name b) extract c) make decision d) will
74. Important
a) essential b) useless c) specific d) horrible
75. Obsolete
a) currently b) trending c) out of date d) organised
76. Reel
a) bloated b) whirl c) restricted d) response
77. Erudite
a) Learned b) Easy c) Loving d) Fault
78. Destroy
a) rain b) build c) display d) ruin
79. Galore
a) scanty b) grand c) abundance d) sway

80. Prominently
 a) predominantly b) distinctly c) indefinitely d) splendid
81. Enormous
 a) huge b) small c) tiny d) invisible
82. Melodrama
 a) tear jerker b) comedy c) horror d) romance

Choose the right meaning: (Q.No.83 to Q.No.85)

83. Analogy
 a) dissimilar b) comparison c) meaning d) stupid
84. Woe
 a) sad b) misery c) happiness d) anger
85. Articulate
 a) clear b) eloquent c) expressive d) unintelligible

Choose Correct Prefix/Suffix: (Q.No.86 to Q.No.89)

86. Happy man.
 a) happyful b) unhappy c) unhappy d) unapp
87. We had to _____ heat the oven before taking the cake.
 a) pre b) un c) dis d) ful
88. We watched the fireworks _____ ploda in the sky.
 a) un b) pre c) dis d) ex
89. Our teacher told us to be care _____ with fire.
 a) much b) ful c) un d) dis

Correct spelling: (Q.No.90 to Q.No.92)

90. The class room could _____ all the students.
 a) accomodat b) accomodate c) accommodat d) accommodate
91. An essential item in Indian _____ is dhal.
 a) cuisine b) ciuisine c) ciusine d) cuisinee
92. Proper _____ is important to communication.
 a) Etiquete b) Etiquette c) Etiquet d) Ettiquete

Choose the correct verb/tense: (Q.No.93 to Q.No.94)

93. Eagles horde _____ the dead bodies.
 a) over b) above c) across d) on
94. _____ of the water has evaporated.
 a) any b) many c) few d) some

Similar relationships – Analogues: (Q.No.95 to Q.No.100)

95. Flower : buds
 a) Tree : Seed b) Fish : Plankton c) Larva : Butterfly d) Eagle : Sparrow
96. Rabbit : Burrows
 a) Hens : Coops b) Den : Lion c) Birds : Jungle d) Insects : Fossils
97. Water : Cotton
 a) Petrol : Coal b) Cloth : Vapour c) Gallons : Bales d) Liters : Meters
98. Busy engaged : _____ Brief
 a) Laconic b) Impress c) Iconic d) Indefinite
99. Pearl : Oyster
 a) Gold : Diamond b) Petrol : Coal c) Ruby : Carbon d) Iron : Calcium
100. Dear : Fawn
 a) Giraffe : Cow b) Goat : Kid c) Fig : Doe d) Ant : Drone

* * * * *

First Semester B.E Degree Examination, Dec.2019/Jan.2020**Technical English – I****(COMMON TO ALL BRANCHES)**

Time: 3 hrs.]

[Max. Marks: 100]

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **hundred** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

Choose the correct option (phonetics): (Q.No.1 to Q.No.6)
Which of these terms refer to the study of speech process?

- | | |
|--------------|-----------------------|
| a) Phonology | b) Phonetic substance |
| c) Phonetics | d) Semantics |
2. Which is not a type of phonetics?
a) Articulatory b) Acoustic c) Personal d) Auditory
3. What is the full form of IPA?
a) Indian Phonetic Alphabet b) International Phonetic Alphabet
c) Indian Phonetic Agreement d) Indian People Alphabet
4. What is the phonetic transcription of “reach”?
a) [ra:tʃ] b) reah c) [ri:rʃ] d) [rəʃ]
5. The word plastic has (plas-tic)
a) 2 syllables with stress on one b) 2 syllables with stress on both
c) 2 syllables with no stress d) 3 syllables with stress on the third
6. The syllable structure for the word “PLANT”
a) CCVC b) CCCC c) CVVVV d) VVVV

Silent and non silent words. Select the missing or silent letters: (Q.No.7 to Q.No.12)

7. a _____ nife.
a) k b) b c) x d) z

8. _____ rong.
a) X b) C c) W d) F

9. _____ sychology.
a) p b) b c) t d) k

10. I always _____ in class.
a) lisен b) list c) listn d) listen

11. The leaves fell in _____.
a) Autumn b) autum c) atum d) atom

12. Do you have a _____.
a) doubt b) dot c) dout d) drought

Choose speech of sound : (Q.No.13 to Q.No.14)

13. Which has the sound / i:/
a) see b) it c) fill d) money

14. R is called
a) Received Pronunciation
b) Received intonation
c) Received pages
d) Received sound

Synonyms: (Q.No.15 to Q.No.24)

21. Galore
 a) scanty b) grand c) abundance d) sway
22. Prominently
 a) predominantly b) distinctly c) indefinitely d) splendid
23. Enormous
 a) huge b) small c) tiny d) invisible
24. Melodrama
 a) tear jerker b) comedy c) horror d) romance

Correct spelling: (Q.No.25 to Q.No.27)

25. The class room could _____ all the students.
 a) accomodat b) accomodate c) accommodat d) accommodate
26. An essential item in Indian _____ is dhal.
 a) cuisine b) ciuisine c) ciusine d) cuisinee
27. Proper _____ is important to communication.
 a) Etiquete b) Etiquette c) Etiquet d) Ettiquete

- Mark the compound noun: (Q.N. 28 to Q.N. 31)**
28. A lot of old student came to the aliminiumt
 a) old students b) Lot c) Meet d) Came
29. Her strength is amazing. (abstract noun)
 a) Her b) Strength c) Was d) Amazing
30. I need the information about the college (which is unaccountable noun)
 a) l b) Information c) College d) Need
31. Most kids like a play in the Water. (Identify the noun)
 a) Unaccountable b) Countable c) Abstract d) Live

Find the Homophones which are right: (Q.No.32 to Q.No.36)

32. You might see a grizzly _____ in the forest.
 a) bear b) bare c) boot d) boo
33. Hey, who _____ the pizza?
 a) ate b) eight c) eat d) eated
34. My mother says, I must not _____ my brothers.
 a) tease b) teas c) tees d) taste

35. _____ is my favourite colour.
 a) blue b) blew c) blu d) blow
36. He feels a little _____ after his illness.
 a) weak b) week c) wak d) wake

Prepositional phrases – Choose the right one: (Q.No.37 to Q.No.48)

37. He is very simple _____ heart.
 a) on b) at c) a d) for
38. Could you put your ideas _____ paper?
 a) at b) on c) a d) for
39. Do not waste time _____ regret.
 a) with b) on c) above d) by
40. The shops are _____ walking distance.
 a) within b) with c) by d) on
41. She was blind _____ the age of ten.
 a) by b) under c) with d) at
42. He was _____ trial for murder.
 a) on b) by c) at d) in
43. She put her house up _____ sale.
 a) at b) for c) under d) within
44. I want to be a doctor.
 a) doc-tor b) doct-r c) doct-re d) doctor
45. He likes to eat an apple.
 a) apple b) ap'pl c) app'le d) appl'e
46. The table was broken.
 a) teible b) tei'ble c) tayyal d) tabl'ee
47. today I am going to America.
 a) to'day b) To-day c) T-oday d) Tod'ay
48. The demand for cell phones was acute.
 a) deMand b) Demand c) DEMAND d) DeMond

Choose the right meaning: (Q.No.49 to Q.No.51)

49. Analogy
 a) dissimilar b) comparison c) meaning d) stupid
50. Woe
 a) sad b) misery c) happiness d) anger
51. Articulate
 a) clear b) eloquent c) expressive d) unintelligible

Choose the correct verb/tense: (Q.No.52 to Q.No.53)

52. Eagles horde _____ the dead bodies.
 a) over b) above c) across d) on
53. _____ of the water has evaporated.
 a) any b) many c) few d) some

54. Which of these element is not involved in the process of communication
 a) Pipe b) Sender c) Message d) Channel
55. Communication refers to a exchange of
 a) Information b) Ideas c) Emotions d) All of these

56. An informal flow of communication exists in the organization. It is
 a) Grapes b) Grapevine c) Grapewine d) Water

57. Intrapersonal Communication implies
 a) Takes places with self b) Takes place with others
 c) Takes place with animals d) Takes place with mothers

58. Interpersonal Communication is also called
 a) Dyadic b) Virtual reality
 c) Mass Communication d) Public speaking

59. Communication is a non-stop
 a) Process b) Programme c) Plan d) Paper

60. Our dress code is an example of
 a) Non Verbal b) Verbal c) Written d) Spoken

61. Extra personal communication takes place with
 a) Animals b) Dolls c) Books d) Plants

62. Badly coded messages confuse the receiver
 a) True b) False c) Never d) We do not know

63. The building block of communication is
 a) Listening b) Singing c) Dancing d) Thinking
64. Communication that moves from bottom to top is
 a) Cross wise b) Downward c) Upward d) Horizontal
65. Written communication is important in an organization
 a) It has a legal status b) It can be thrown away
 c) People do not read d) Writing is boring
66. Which of the following is a oral communication
 a) Dictation b) Email c) Notice d) Letters
67. No communication is complete without
 a) Noise b) Feedback c) Sleep d) Yawn
68. The common barriers to communication in an organization is
 a) Listening barrier b) Language c) Cultural barrier d) All of these

Similar relationships – Analogues: (Q.No.69 to Q.No.74)

69. Flower : buds
 a) Tree : Seed b) Fish : Plankton c) Larva : Butterfly d) Eagle : Sparrow
70. Rabbit : Burrows
 a) Hens : Coops b) Den : Lion c) Birds : Jungle d) Insects : Fossils
71. Water : Cotton
 a) Petrol : Coal b) Cloth : Vapour c) Gallon : Lales d) Liter : Meters
72. Busy engaged : _____ Brief
 a) Laconic b) Impress c) Iconic d) Indefinite
73. Pearl : Oyster
 a) Gold : Diamond b) Petrol : Coal c) Ruby : Carbon d) Iron : Calcium
74. Dear : fawn
 a) Giraffe : Cow b) Goat : Kid c) Pig : Doe d) Ant : Drone

Name the parts of speech which are underlined: (Q.No.75 to Q.No.79)

75. He walked around the park.
 a) Noun b) Preposition c) Verb d) Conjunction
76. She got a strawberry ice cream.
 a) Noun b) Verb c) Interjection d) Adverb
77. Older people have less energy.
 a) Verb b) Adjective c) Adverb d) Noun

78. My sister answered quietly.
 a) Noun b) Conjunction c) Verb d) adverb
79. I like chips and cake.
 a) Noun b) Conjunction c) Adverb d) Verb

**Point out the underlined nouns are common, proper, collective, abstract:
 (Q.No.80 to Q.No.84)**

80. You must speak the truth.
 a) Collective noun b) Proper c) Abstract d) Common
81. He gave me a bunch of grapes.
 a) Proper b) Common c) Collective d) Abstract
82. Priya is my younger sister.
 a) Proper b) Common c) Collective d) Abstract
83. The Lion is the king of beasts.
 a) Proper b) Common c) Collective d) Abstract
84. He owns a fleet of cars.
 a) Proper b) Common c) Collective d) Abstract

Choose the right articles: (Q.No.85 to Q.No.89)

85. Sarah lives in — big bedroom house.
 a) a b) an c) the d) no article
86. The test result will be available in — hour.
 a) a b) an c) the d) no article
87. — old friend of mine came today.
 a) a b) an c) the d) no article
88. We are running out of — water. We need to buy a bottle.
 a) a b) an c) the d) no article
89. — Mexico is a beautiful country.
 a) a b) an c) the d) no article

Question tags: (Q.No.90 to Q.No.96)

90. Give an example,
 a) will you b) won't you c) can you d) do you
91. Let's go to the party,
 a) shall we b) shan't we c) should we d) do we

92. Gopal was never been to Gao,
 a) was he? b) does he? c) hasn't he? d) will he?
93. You were at home,
 a) weren't you b) are you c) do you d) had you
94. She is an American,
 a) isn't she? b) is she? c) not she d) won't she
95. We must watch the movies,
 a) shouldn't we b) mustn't we c) do they d) mustn't they
96. I am beautiful,
 a) aren't I b) are I c) Is there d) am I not

Choose Correct Prefix/Suffix: (Q.No.97 to Q.No.100)

97. He was an _____ happy man.
 a) happyful b) unhappy c) rehappy d) dishappy
98. We had to _____ heat the oven before baking the cake.
 a) pre b) un c) dis d) ful
99. We watched the fireworks _____ ploda in the sky.
 a) un b) pre c) dis d) ex
100. Our teacher told us to be care _____ with fire.
 a) much b) ful c) un d) lis

* * * * *

B.L.D.E. ASSOCIATION'S
VACHANA PITAMAHĀ

First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
Elements of Civil Engineering and Mechanics

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Missing data, if any, may be suitably assumed.

Module-1

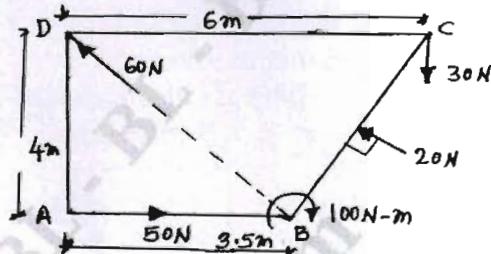


Fig.Q1(c)

OR

- 2 a. State and explain the effect of infrastructural facilities on social-economic development of a country. (08 Marks)

b. State i) Principle of transmissibility ii) Resolution and composition of forces. (04 Marks)

c. Find the angle ' α ' if resultant force of the system shown in Fig.Q2(c) is vertical, also find magnitude of resultant force. (08 Marks)

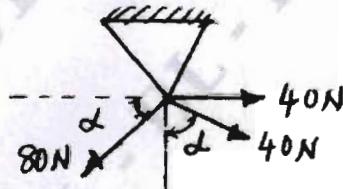


Fig.Q2(c)

Module-2

- 3 a. State and explain free body diagram with examples. (04 Marks)
 b. Find tension in string if the system is in equilibrium shown in Fig.Q3(b). (08 Marks)

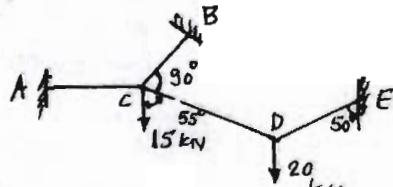


Fig.Q3(b)

- c. A uniform ladder weight 850N and length 6m rests on a horizontal ground and leans against a smooth vertical wall. The angle made by the ladder with horizontal is 65° . When man of weight 700N stands on the ladder at a distance of 4m from the top of the ladder, the ladder slides right side. Determine the coefficient of friction between ladder and ground. (08 Marks)

OR

- 4 a. State laws of dry friction. (04 Marks)
 b. Find contact pressure at surfaces of contact for the system shown Fig.Q4(b) for two identical cylinders P and Q. (08 Marks)

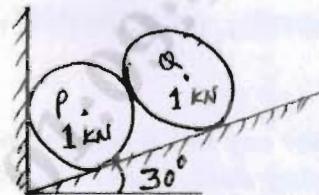


Fig.Q4(b)

- c. A block weighing 3kN overlying a 10° wedge on a horizontal floor and leaning against a vertical wall is to be raised by applying a horizontal force to the wedge. Angle of friction between wall and the block as 15° and for other surfaces of contact as 18° . Determine minimum horizontal force to be applied to rise the block shown in Fig.Q4(c). (08 Marks)

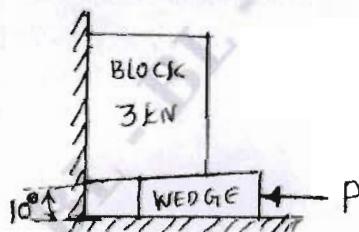


Fig.Q4(c)

Module-3

- 5 a. Distinguish between :
 i) Statically determinate and indeterminate beams with examples (06 Marks)
 ii) Method of Joints and method of sections.
 b. State assumptions made in truss analysis. (04 Marks)
 c. Find support reactions for the beam shown in Fig.Q5(c). (10 Marks)

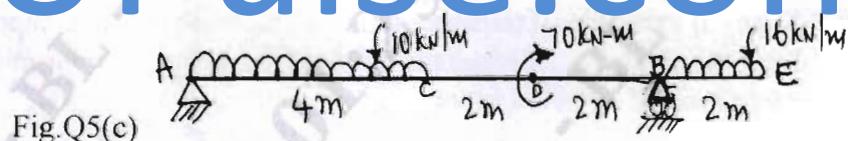


Fig.Q5(c)

OR

- 6 a. Define support and support reaction and explain different types of supports with neat sketches. (06 Marks)
 b. Find support reactions for cantilever beams shown in Fig.Q6(b). (04 Marks)

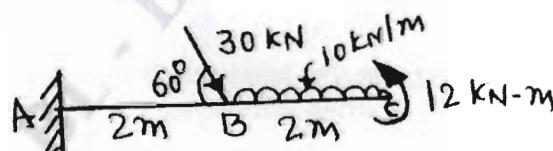


Fig.Q6(b)

- c. Find forces in members of truss shown in Fig.Q6(c) using methods of joints and tabulate member forces. (10 Marks)

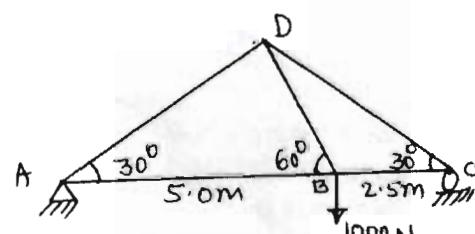


Fig.Q6(c)

Module-4

- 7 a. Determine second moment area of semicircle about horizontal diametrical axis. (06 Marks)
 b. State and prove parallel axes theorem. (04 Marks)
 c. Locate the Centroid of plane area shown in Fig.Q7(c). (10 Marks)

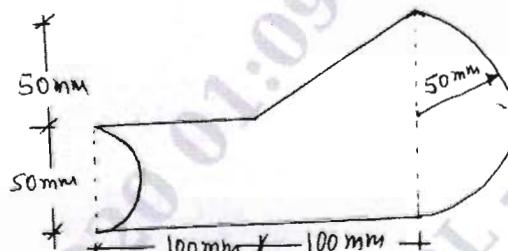


Fig.Q7(c)

OR

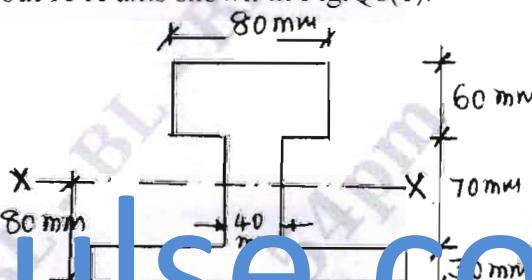


Fig.08(C)

Module-5

- 9** a. State and explain D'Alembert's principle. (04 Marks)

b. Define : i) Super elevation and state the importance of super elevation
ii) Displacement, acceleration and instantaneous velocity. (06 Marks)

c. A bullet fired upwards at an angle of 30° to the horizontal from top of hill of height 80m and bullet strikes the ground which is 80m lower than the point of projection. If Initial velocity of bullet is 100m/sec. Find :
i) Maximum height the bullet rise above the point of projection
ii) The velocity with which it strikes the ground
iii) Time of flight of bullet. (10 Marks)

OR

- 10** a. State Newton's laws of motion. (04 Marks)

b. A body falling freely under the action of gravity passes two points 20m apart vertically in 0.4 seconds. From what height above the higher point the body starts to fall take $g = 9.8 \text{ m/sec}^2$. (08 Marks)

c. A fly wheel rotating at 200rpm and after 10 seconds it rotates at 160rpm. If the retardation is uniform determine number of revolutions made and time taken by flywheel before it comes to rest from the speed of 200 rpm. (08 Marks)

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First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
C Programming for Problem Solving

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.**Module-1**

- 1 a. How would you explain the components of a computer with the block diagram? (08 Marks)
b. Describe the types of computers. (06 Marks)
c. Convert the following mathematical expression into C equivalent statements.

i) $m = x^4 + \sqrt{x + \frac{y}{k}} - 4x + 6$

ii) $x = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$

iii) Area = $\pi r^2 + 2\pi rh$

(06 Marks)

OR

- 2 a. How can you write the basic structure of a C program? Explain with examples. (08 Marks)
b. Define a token. Explain the different tokens available in C language. (08 Marks)
c. How would you explain logical operator in a C language. (04 Marks)

- 3 a. With examples how would you describe the formatted input and formatted output statements in C language. (08 Marks)
b. How would you explain if – else statement in C language? Give the relevant example. (06 Marks)
c. Write a program in C to display the grade based on the marks as follows :

Marks	Grades
0 to 39	F
40 to 49	E
50 to 59	D
60 to 69	C
70 to 79	B
80 to 89	A
90 to 100	O

(06 Marks)

OR

- 4 a. How would you explain switch statement with an example? (08 Marks)
b. How the while loop differs from do-while loop? (06 Marks)
c. Write a program to check whether a given integer is palindrome or not? (06 Marks)

Module-3

- 5 a. Define an array. How would you explain declaration and initialization of one dimensional array? (06 Marks)
b. Write a program in C to implement binary searching technique. (06 Marks)
c. How would you explain with examples, the string manipulation functions? (08 Marks)

OR

- 6 a. Write a program to read N integers and to arrange them in ascending order using bubble sort technique. (06 Marks)
 b. How would you explain the declaration and initialization of string variables? (06 Marks)
 c. Write a program to multiply 2 matrices, by ensuring their multiplication compatibility. (08 Marks)

Module-4

- 7 a. How would you illustrate the elements of user defined functions with examples? (10 Marks)
 b. Write a program in C to find the factorial of a given integer using functions. (05 Marks)
 c. Explain how call by value differs from call by reference while invoking a function. (05 Marks)

OR

- 8 a. How would you explain the categories of user defined functions? (10 Marks)
 b. Write a program in C to compute the Fibonacci series up to n terms using recursion. (06 Marks)
 c. List the storage class specifiers. Explain any one of them. (04 Marks)

Module-5

- 9 a. Define a structure. How would you declare and initialize structure variables? Give examples. (07 Marks)
 b. Define Pointer. How pointers are declared and initialized? (06 Marks)
 c. Write a C program to read details of 10 students and to print the marks of the student if his name is given as input. (07 Marks)

OR

- 10 a. Write a program in C to add two numbers using pointers. (05 Marks)
 b. How would you explain the categories of preprocessor directives in C? (10 Marks)
 c. How would you explain nested structures? (05 Marks)

* * * *



First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020

Engineering Physics

Time: 3 hrs.

Max. Marks: 100

Note: I. Answer any FIVE full questions, choosing ONE full question from each module.

2. Physical constants : velocity of light $C = 3 \times 10^8 \text{ m/s}$; Planck's constant $h = 6.63 \times 10^{-34} \text{ J-S}$; Mass of an electron $m = 9.11 \times 10^{-31} \text{ kg}$ Boltzmann constant $K = 1.38 \times 10^{-23} \text{ J/K}$; Avagadro number $N_A = 6.02 \times 10^{26}/\text{K mole}$.

Module-1

1. a. Give the theory of forced vibrations and obtain the expression for amplitude. (08 Marks)
- b. With a neat diagram, explain the construction and working of Reddy tube. Mention four applications of shock waves. (08 Marks)
- c. Calculate the resonant frequency for a simple pendulum of length 1m. (04 Marks)

OR

2. a. Define force constant and mention its physical significance. Derive the expression for force constant for springs in series and parallel combination. (08 Marks)
- b. Define simple harmonic motion. Derive the differential equation of motion for it using Hook's law. Mention the characteristics and examples of simple harmonic motion. (08 Marks)
- c. The distance between the two pressure sensors in a shock tube is 150mm. The time taken by a shock wave to travel this distance is 0.3ms. If the velocity of sound under the same condition is 340m/s, find the Mach number of the shock wave. (04 Marks)

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Module-2

3. a. Explain longitudinal stress, longitudinal strain, volume stress and volume strain. Discuss the effect of stress, temperature, annealing and impurities on elasticity. (08 Marks)
- b. Derive the relation between bulk modulus(k), Young's modulus (Y) and Poisson's ratio (σ), what are the limiting values of Poisson's ratio? (08 Marks)
- c. Calculate the extension produced in a wire of length 2m and radius $0.013 \times 10^{-2} \text{ m}$ due to a force of 14.7 Newton applied along its length. Given, Young's modulus of the material of the wire $Y = 2.1 \times 10^{11} \text{ N/m}^2$. (04 Marks)

OR

4. a. Describe a single cantilever and derive the expression for Young's modulus of the material of rectangular beam. (08 Marks)
- b. Derive an expression for couple per unit twist for a solid cylinder with a diagram. (08 Marks)
- c. Calculate the angular twist of a wire of length 0.3m and radius $0.2 \times 10^{-3} \text{ m}$ when a torque of $5 \times 10^{-4} \text{ Nm}$ is applied. (Rigidity modulus of the material is $8 \times 10^{10} \text{ N/m}^2$). (04 Marks)

Module-3

5. a. Explain Divergence and curl. Derive Gauss Divergence theorem. (08 Marks)
- b. Define V-number and fractional index change. With a neat diagrams, explain different types of optical fibers. (08 Marks)
- c. Find the divergence of the vector field \vec{A} given by $\vec{A} = 6x^2 \hat{a}_x + 3xy^2 \hat{a}_y + xyz^3 \hat{a}_z$ at a point P(1, 3, 6). (04 Marks)

Qk

- 6 a. Derive the expression for displacement current. Mention 4 Maxwell's equations in differential form for time varying fields. (08 Marks)
- b. Derive an expression for numerical aperture in an optical fiber and state the condition for propagation. (08 Marks)
- c. Find the attenuation in an optical fiber of length 500m When a light signal of power 100mw emerges out of the fiber with a power 90mw. (04 Marks)

Module-4

- 7 a. State and explain Heisenberg's Uncertainty Principle. Show that the electron cannot exist inside the nucleus. (08 Marks)
- b. Define spontaneous emission and stimulated emission. Explain the construction and working of semiconductor Laser. (08 Marks)
- c. A particle of mass $0.5\text{mev}/C^2$ has kinetic energy 100eV. Find its de Broglie wavelength, where C is the velocity of light. (04 Marks)

OR

- 8 a. Assuming the time independent Schrödinger wave equation, discuss the solution for a particle in one dimensional potential well of infinite height. Hence obtain the normalized wave function. (08 Marks)
- b. Derive the expression for energy density in terms of Einstein's co-efficient. (08 Marks)
- c. The ratio of population of two energy levels is 1.059×10^{-30} . Find the wavelength of light emitted by spontaneous emissions at 330K. (04 Marks)

Module-5

- 9 a. Give the assumptions of quantum free electron theory. Discuss two success of quantum free electron theory. (08 Marks)
- b. What are polar and non-polar dielectrics? Explain types of polarization. (08 Marks)
- c. Calculate the probability of an electron occupying an energy level 0.02ev above the Fermi level at 200K and 400K in a material. (04 Marks)

OR

- 10 a. Define internal field. Mention the expressions for internal field, for one dimension, for three dimensional, and Lorentz field for dialectics. Derive Clausius – Morsotti equation. (08 Marks)
- b. Describe Fermi level in an intrinsic semi conductor and hence obtain the expression for Fermi energy in terms of energy gap of intrinsic semiconductor. (08 Marks)
- c. An elemental solid dielectric material has polarizability $7 \times 10^{-40}\text{Fm}^2$. Assuming the internal field to be Lorentz field, calculate the dielectric constant for the material if the material has 3×10^{28} atoms/m³. (04 Marks)

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First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
Basic Electronics

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1. a. Explain the working of PN junction diode under forward and reverse biased conditions. (06 Marks)
- b. Explain the working of Photodiode. (05 Marks)
- c. Explain with neat circuit diagram and waveforms, the working of full wave bridge rectifier. Show that the efficiency of full wave bridge rectifier is 81%. (09 Marks)

OR

2. a. Explain the operation of Half wave rectifier with capacitor filter with neat circuit diagram and waveforms. (06 Marks)
- b. A full wave rectifier uses 2 diodes having internal resistance of $10\ \Omega$ each. The transformer RMS secondary voltage from center to each end is 200V. Find I_m , I_{dc} , I_{rms} and V_{dc} if the load is $800\ \Omega$. (06 Marks)
- c. Explain how zener diode helps in voltage regulation with neat circuit diagram. Give detail mathematical analysis. (08 Marks)

- Module-2**
3. a. Explain the construction, working and characteristics of n-channel JFET. (09 Marks)
 - b. With a neat circuit diagram, explain the working of CMOS inverter. (06 Marks)
 - c. For a n-channel JFET if $I_{DSS} = 9\text{ mA}$ and $V_p = -6\text{ V}$. Calculate I_D at $V_{gs} = -4\text{ V}$ and V_{gs} at $I_D = 3\text{ mA}$. (05 Marks)

OR

4. a. Explain the construction, working and characteristics of enhancement type MOSFET. (09 Marks)
- b. Explain the working of Silicon Controlled Rectifier [SCR] using two transistor model. (06 Marks)
- c. For an EMOSFET, determine the value of I_D if $I_{D(on)} = 4\text{ mA}$, $V_{gs(on)} = 6\text{ V}$, $V_T = 4\text{ V}$ and $V_{gs} = 8\text{ V}$. (05 Marks)

Module-3

5. a. What is an OP-AMP? List the characteristics of an ideal OP-AMP. (06 Marks)
- b. Explain the operation of an OP-AMP as inverting amplifier with neat diagram and waveforms. (06 Marks)
- c. Explain how OP-AMP can be used as (i) Integrator (ii) Voltage follower. (08 Marks)

OR

6. a. Explain the different input modes of an OP-AMP. (06 Marks)
- b. Design an adder circuit using OP-AMP to obtain an output voltage, $V_o = -[2V_1 + 3V_2 + 5V_3]$. Assume $R_f = 10\text{ k}\Omega$. (06 Marks)

- c. Explain the following terms with respect to OP-AMP:
 (i) CMRR (ii) Slew rate (iii) Input bias current (iv) Supply Voltage Rejection ratio.
 (08 Marks)

Module-4

- 7 a. With a neat circuit diagram, explain how transistor is used as an amplifier. Derive an equation for A_v .
 (08 Marks)
 b. Explain RC phase shift oscillator with circuit diagram and necessary equations. (08 Marks)
 c. Explain the voltage series feedback circuit and derive an equation for voltage gain, A_v , with feedback.
 (04 Marks)

OR

- 8 a. With a neat circuit diagram, explain the working of Wein-bridge oscillator. (08 Marks)
 b. Explain the operation of IC555 as an Astable oscillator with neat circuit diagram and necessary equations. (08 Marks)
 c. The Transistor in CE configuration is shown in Fig.Q8(c) with $RC = 1 \text{ k}\Omega$ and $\beta_{DC} = 125$. Determine
 (i) V_{CE} at $V_{in} = 0 \text{ V}$.
 (ii) $I_{B(\min)}$ to saturate the collector current
 (iii) $R_B(\max)$ when $V_{in} = 8 \text{ V}$
 $V_{CE(sat)}$ can be neglected.



Fig.Q8(c)

(04 Marks)

Module-5

- 9 a. Design Full adder circuit and implement it using basic gates. (08 Marks)
 b. Find (i) $(1101\ 0111\ 0110\ 1010)_2 = (?)_{16}$
 (ii) $(EB986)_{16} = (?)_2$
 (iii) $(925.75)_{10} = (?)_8$ (06 Marks)
 c. Explain the basic elements of communication system with block diagram. (06 Marks)

OR

- 10 a. State and prove De-Morgan's theorem. (06 Marks)
 b. With a block diagram, explain the working of a 3-bit ripple counter. (06 Marks)
 c. What is a Flip-flop? Explain the operation of master-slave JK flip-flop. (08 Marks)

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First/Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
Elements of Mechanical Engineering

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Distinguish between conventional and non-conventional sources of energy. (08 Marks)
b. With neat sketch, explain principle of working of Hydrostatic power plant. (08 Marks)
c. State and explain the Zeroth law of thermodynamics. (04 Marks)

OR

- 2 a. Distinguish between: i) Open System and closed system ii) Heat and work (06 Marks)
b. Define: i) Sensible heat ii) Latent heat iii) Dryness fraction iv) Wet steam. (08 Marks)
c. Find the specific volume and enthalpy of 1kg of steam at 0.8MPa. i) When the dryness fraction is 0.9 ii) When the steam is superheated to a temperature of 300°C. The specific heat of superheated steam is 2.25kJ/kg K. (06 Marks)

Module-2

- 3 a. Explain with a neat sketch, the working of Babcock and Wilcox boiler. (12 Marks)
b. Write a brief note on:
i) Priming of pumps.
ii) Cavitation in pumps. (08 Marks)

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OR

- 4 a. List and explain in brief, the boiler mountings and accessories. (10 Marks)
b. Sketch and explain the working of Pelton wheel. (10 Marks)

Module-3

- 5 a. With help of PV diagram, explain the working of four stroke petrol engine. (08 Marks)
b. Mention the advantages of two stroke engine over four stroke engine. (06 Marks)
c. List the desirable properties of an ideal refrigerant. (06 Marks)

OR

- 6 a. With neat sketch explain the working principle of vapour absorption refrigeration system. (08 Marks)
b. Calculate the brake power of a single cylinder four stroke petrol engine which is running at a speed of 400rpm. The load on the brake drum is 24kg and the spring balance reads 4kg. The diameter of the brake drum is 600mm and the rope diameter is 30mm. (06 Marks)
c. Define: i) Refrigeration ii) COP iii) Ton of refrigeration. (06 Marks)

Module-4

- 7 a. Differentiate between ferrous and non ferrous metals. (06 Marks)
b. What is a composite? How are composite materials classified? List the applications of composite materials. (08 Marks)
c. Distinguish between soldering, brazing and welding. (06 Marks)

OR

- 8 a. Describe the principle of arc welding with suitable welding circuit diagram. (08 Marks)
b. What are the advantages and disadvantages of gear drive? (06 Marks)
c. Define slip with reference to belt drive. Why it occurs explain the phenomenon of creep in belt drives. (06 Marks)

Module-5

- 9 a. Draw a neat sketch of engine lathe and label the parts. (10 Marks)
b. Explain the following with sketches:
i) Up milling
ii) Down milling
iii) Face milling. (10 Marks)

OR

- 10 a. Define a robot and list the classification of robot based on physical configuration. (08 Marks)
b. List and explain various components of CNC. What are the advantages and disadvantages of CNC? (12 Marks)

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Second Semester B.E. Degree Examination, Dec.2019/Jan.2020
Advanced Calculus and Numerical Methods

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1. a. Find the directional derivative of $\phi = 4xz^3 - 3x^2y^2z$ at $(2, -1, 2)$ along $2\hat{i} - 3\hat{j} + 6\hat{k}$. (06 Marks)
- b. If $\bar{f} = \nabla(x^3 + y^3 + z^3 - 3xyz)$ find $\text{div } \bar{f}$ and $\text{curl } \bar{f}$. (07 Marks)
- c. Find the constants a and b such that $\bar{F} = (axy + z^3)\hat{i} + (3x^3 - z)\hat{j} + (bxz^2 - y)\hat{k}$ is irrotational. Also find a scalar potential ϕ if $\bar{F} = \nabla\phi$. (07 Marks)

OR

2. a. If $\bar{F} = xy\hat{i} + yz\hat{j} + zx\hat{k}$ evaluate $\int_C \bar{F} \cdot d\bar{r}$ where C is the curve represented by $x = t$, $y = t^2$, $z = t^3$, $-1 \leq t \leq 1$. (06 Marks)
- b. Using Stoke's theorem Evaluate $\oint_C \bar{F} \cdot d\bar{r}$ if $\bar{F} = (x^2 + y^2)\hat{i} - 2xy\hat{j}$ taken round the rectangle bounded by $x = 0$, $x = a$, $y = 0$, $y = b$. (07 Marks)
- c. Using divergence theorem, evaluate $\iint_S \bar{F} \cdot \bar{n} ds$ if $\bar{F} = (x^2 - yz)\hat{i} + (y^2 - zx)\hat{j} + (z^2 - xy)\hat{k}$ taken around $0 \leq x \leq 1$, $0 \leq y \leq 1$, $0 \leq z \leq 1$. (07 Marks)

3. a. Solve $(4D^4 - 8D^3 - 7D^2 + 11D + 6)y = 0$ (06 Marks)
- b. Solve $(D^2 + 4D + 3)y = e^{-x}$ (07 Marks)
- c. Using the method of variation of parameter solve $y'' + 4y = \tan 2x$. (07 Marks)

OR

4. a. Solve $(D^3 - 1)y = 3 \cos 2x$ (06 Marks)
- b. Solve $x^2y'' - 5xy' + 8y = 2 \log x$ (07 Marks)
- c. The differential equation of a simple pendulum is $\frac{d^2x}{dt^2} + W_0^2 x = F_0 \sin nt$, where W_0 and F_0 are constants. Also initially $x = 0$, $\frac{dx}{dt} = 0$ solve it. (07 Marks)

Module-3

5. a. Find the PDE by eliminating the function from $z = y^2 + 2f\left(\frac{1}{x} + \log y\right)$. (06 Marks)
- b. Solve $\frac{\partial^2 z}{\partial x \partial y} = \sin x \sin y$ given $\frac{\partial z}{\partial y} = -2 \sin y$, when $x = 0$ and $z = 0$, when y is odd multiple of $\frac{\pi}{2}$. (07 Marks)
- c. Derive one-dimensional wave equation in usual notations. (07 Marks)

OR

- 6 a. Solve $\frac{\partial^2 z}{\partial x^2} = a^2 z$ given that when $x = 0 \frac{\partial z}{\partial x} = a \sin y$ and $z = 0$. (06 Marks)
- b. Solve $x(y - z) p + y(z - x) q = z(x - y)$. (07 Marks)
- c. Find all possible solution of $U_t = C^2 U_{xx}$ one dimensional heat equation by variable separable method. (07 Marks)

Module-4

- 7 a. Test for convergence for $1 + \frac{2!}{2^2} + \frac{3!}{3^2} + \frac{4!}{4^2} + \dots$ (06 Marks)
- b. Find the series solution of Legendre differential equation $(1 - x^2)y'' - 2xy' + n(n + 1) = 0$ leading to $P_n(x)$. (07 Marks)
- c. Prove the orthogonality property of Bessel's function as $\int_0^1 x \bar{j}_n(\alpha x) \bar{j}_n(\beta x) dx = 0 \quad \alpha \neq \beta$ (07 Marks)

OR

- 8 a. Test for convergence for $\sum \left(1 + \frac{1}{\sqrt{n}}\right)^{-n^{3/2}}$ (06 Marks)
- b. Find the series solution of Bessel differential equation $x^2 y'' + xy' + (n^2 - x^2) y = 0$ Leading to $\bar{j}_n(x)$. (07 Marks)
- c. Express the polynomial $x^3 + 2x^2 - 4x + 5$ in terms of Legendre polynomials. (07 Marks)

- 9 a. Using Newton's forward difference formula find $f(28)$. (06 Marks)
- | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|
| x | 40 | 50 | 60 | 70 | 80 | 90 |
| f(x) | 184 | 204 | 226 | 250 | 276 | 304 |
- b. Find the real root of the equation $x \log_{10} x = 1.2$ by Regula falsi method between 2 and 3 (Three iterations). (07 Marks)
- c. Evaluate $\int_4^{5.2} \log x dx$ by Weddle's rule considering six intervals. (07 Marks)

OR

- 10 a. Find $f(9)$ from the data by Newton's divided difference formula:

x	5	7	11	13	17
f(x)	150	392	1452	2366	5202

(06 Marks)

- b. Using Newton – Raphson method, find the real root of the equation $x \sin x + \cos x = 0$ near $x = \pi$. (07 Marks)

- c. By using Simpson's $\left(\frac{1}{3}\right)$ rule, evaluate $\int_0^6 \frac{dx}{1+x^2}$ by considering seven ordinates. (07 Marks)

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Second Semester B.E Degree Examination, Dec.2019/Jan.2020
Technical English – II

(COMMON TO ALL BRANCHES)

Time: 3 hrs.]

[Max. Marks: 100]

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **hundred** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

Choose the appropriate verb that agrees with the subject. (Q.No.1 to Q.No.4)

1. Either of the brothers _____ responsible for this.
 a) are b) am c) were d) was
2. Which of these students _____ won the medal?
 a) have b) has c) having d) not have
3. The horse and carriage _____ ready.
 a) are b) is c) am d) have
4. The cricket team _____ arriving in two different trains today.
 a) am b) was c) is d) are

Choose the correct pronoun that agrees with the noun. (Q.No.5 to Q.No.7)

5. The jury has concluded the proceedings and given _____ verdict.
 a) the b) there c) their d) themselves
6. Let _____ and me carry out the reconnaissance.
 a) he b) his c) him d) himself
7. This is the office of Rohan, _____ is an activist.
 a) who b) whom c) which d) none

Select the correct tense form of the verb. (Q.No.8 to Q.No.12)

8. Someone _____ left their luggage outside.
 a) have b) has c) is d) was
9. One of the novelists _____ been nominated for a prize.
 a) have b) was c) is d) has
10. The M.D. as well as his secretary _____ reaching here in an hour.
 a) are b) was c) may be d) is
11. People really _____ about noise pollution.
 a) bothers b) bothered c) bother d) bothering
12. The singer and actor _____ our guest today.
 a) an b) is c) are d) was

Choose the correct form of the Active or Passive Voice of the following sentences: (Q.No.13 to Q.No.17)

13. People speak Chinese in China.
 a) Chinese is spoken in China b) Chinese is spoken by the Chinese
 c) Chinese is being spoken by the Chinese d) China has Chinese speakers
14. Is he painting these lovely pictures?
 a) These lovely pictures are his paintings.
 b) Are these lovely pictures being painted by him?
 c) He is the painter of these lovely pictures.
 d) His paintings are of lovely pictures.
15. Which song shall I sing?
 a) Which song should be sung by me? b) Shall I sing a song? Which one?
 c) Which song will be sung by me? d) Which song is to be sung?
16. The dog was being attacked by the leopard.
 a) The leopard attacked the dog b) The leopard could attack only one dog.
 c) The leopard is attacking the dog. d) The leopard is unable to attack.
17. Let the speech be begun.
 a) Let the speech go on b) Begin the speech
 c) Give the speech d) Continue the speech

Choose the correct word to fill the blank: (Q.No.18 to Q.No.22)

18. The company purchased _____.
 a) machineries b) machines c) machinery d) mechanics
19. He is the _____ of the two.
 a) elder b) older c) eldest d) none of these

20. Your _____ imagination helped you write well.
 a) clear b) vivid c) strong d) poor
21. A _____ of artistes have arrived in town.
 a) troop b) troops c) troupe d) single
22. The cave furniture _____ the interior of the cafe.
 a) compliments b) compliment c) complements d) complaints

Select the correct meaning of the underlined idiom (Q.No.23 to Q.No.25)

23. Many startups turn in a profit once in a blue moon.
 a) scarcely b) rarely c) suitably d) quietly
24. The stockholders poured cold water on the plan to invest in a new venture.
 a) praise b) silence c) criticize d) hush
25. If you try to cut corners during a manufacturing process, you stand to lose.
 a) save money b) waste money c) discount d) change the product

Choose the correct articles from the given options. (Q.No.26 and Q.No.27)

26. The more the effort, _____ more the reward.
 a) a b) an c) the d) no article required
27. _____ iron is a useful metal.
 a) a b) an c) the d) no article required

**Choose the appropriate phrases from the given options to fill in the blanks.
(Q.No.28 and Q.No.29)**

28. You really hit the nail _____ in your speech.
 a) in the head b) over the head c) above the head d) on the head
29. I wonder what that was about, it was all _____ to me.
 a) Greek and Latin b) French and Chinese
 c) Spanish and Chinese d) Latin and Greek

Choose the appropriate adverbs: (Q.No.30 to Q.No.34)

30. The candidate performed _____.
 a) brilliance b) brilliant c) brilliantly d) none
31. In the exam, I wrote the answers _____.
 a) quicker b) quickest c) quickly d) quicken
32. He _____ studies, yet scores well.
 a) hard b) harder c) hardly d) hardest

33. It is _____ said that silence is golden.
 a) rightly b) wrongly c) wrongfully d) rightfully
34. The function ended too _____.
 a) quickly b) nicely c) wonderfully d) awesome

Choose the correct one word substitute: (Q.No.35 to Q.No.39)

35. A study of birds.
 a) ornithology b) orientology c) ethnology d) democracy
36. A government by officials.
 a) Bureaucracy b) aristocracy c) Plutocracy d) autocracy
37. One who is a newcomer
 a) neophyte b) neonate c) newbie d) non-violent
38. One with a broad and international outlook.
 a) Cynic b) Cosmopolitan c) Stoic d) Democrat
39. One who can speak many languages.
 a) polyglot b) critic c) analyst d) philosopher

Fill in the blanks with the appropriate adjectives (Q.No.40 to Q.No.44)

40. The fish are moving in _____ manner.
 a) fast b) quick c) slow d) none of these
41. They have a _____ home in the hills.
 a) beauteous b) beauty c) beautiful d) none of these
42. She is the _____ intelligent girl in the class.
 a) more b) much c) most d) poor
43. It is a _____ unique idea.
 a) very b) quite c) no adjective required d) none of these
44. It is the _____ peak in the range.
 a) northern b) northerner c) northernmost d) none of these
45. Which of the following words is a preposition?
 a) under b) sitting c) kindly d) become
46. Select the wrongly spelt word.
 a) emanate b) copious c) beligerently d) gamut
47. Name an interpersonal barrier from the choices given below.
 a) similar perception b) identical assumptions
 c) differing background d) same inferences

Select the correct gender of the underlined words: (Q.No.66 to Q.No.70)

- 66.** My niece is a beautiful child.
a) masculine b) feminine c) neuter d) common

67. A peacock was dancing on the lawn.
a) masculine b) feminine c) neuter d) common

68. s/he is the author of the book.
a) masculine b) feminine c) neuter d) common

69. She is an actress from Hollywood.
a) masculine b) feminine c) neuter d) common

70. The scenery of Switzerland is charming.
a) masculine b) feminine c) neuter d) common

71. She said, "I have won seven gold medals." The indirect speech of the sentence is
a) She said that she had won seven gold medals
b) She claimed that she had won several medals
c) She said that she has won several gold medals
d) None of these

72. Which word of the following is a conjunction?
a) because b) fast c) most d) none of these

73. Which of the following is an interjection?
a) Wow b) Nonsense c) Quiet please d) none of these

74. Select the correctly spelt word.
a) Britannica b) Brittannica c) Britannica d) Bretannic

Choose the right conjunction to close the gap: (Q.No.76 to Q.No.80)

76. _____ he travels a lot, he works very hard.
a) though b) but c) yet d) still

77. The match was called off _____ of the rain.
a) despite b) in spite c) because d) none of these

78. Not only the visitors _____ the family were happy.
a) but also b) but c) also d) and

79. No sooner had we arrived _____ the programme started.
a) when b) than c) then d) none of these

80. Hardly had we reached the station, _____ the train pulled in.
a) when b) then c) than d) none of these

Select the correct preposition to complete the sentence (Q.No.81 to Q.No.90)

81. The migrant workers arrived in the city four years _____.
a) before b) earlier c) since d) ago

82. The British P.M. lives _____ No. 10, Downing street.
a) in b) on c) at d) y

83. The minister cannot be disturbed _____ meeting.
a) while b) since c) between d) during

84. The forms have to be submitted _____ 25th of October 2019.
a) by b) at c) during d) within

85. The bakery is _____ the street.
a) over b) on c) across d) in

86. The students went _____ home.
a) to b) at c) in d) none

87. Flour is made _____ wheat.
a) of b) by c) with d) from

88. The teacher agreed _____ the official.
a) with b) to c) for d) from

89. The farmer is suffering _____ dengue.
a) for b) with c) by d) from

90. The course comprises _____ five modules.
a) in b) for c) of d) none

91. Choose the part of the given sentences in which the grammatical error is noticeable.
 One of the / novelists / are selected / for a prize.
 a) one of the b) novelists c) are selected d) for a prize
92. Choose the option that is a hindrance to personal communication skills.
 a) verbosity b) listening c) distraction d) attentiveness
93. Non-verbal communication does not include.
 a) gestures b) silence c) posture d) words
94. Which of the following is not an element of group discussion?
 a) participants b) common objectives
 c) sharing of views d) written test
95. Pick an aspect of non-verbal communication from the options given below.
 a) Proxemics b) Paraphrasing c) Report d) Singing

Choose the correct word to fill the gaps in the following. (Q.No.96 to Q.No.97)

96. April 22nd is celebrated 1 Earth Day. The first 2 was held in the US in 1970. Globally even the Earth week is 3 Environmental problems are 4 with.
- | | | | |
|--------------|--------------|-------------|-------------|
| 1) (A) on | (B) as | (C) at | (D) in |
| 2) (A) one | (B) day | (C) week | (D) party |
| 3) (A) noted | (B) observed | (C) hailed | (D) greeted |
| 4) (A) dealt | (B) deal | (C) dealing | (D) deals |
| a) AA BA | b) CBDB | c) DCCA | d) BDAC |
97. Nothing teaches you more than 1 the world and 2 experiences. The term travelling and education cannot be 3 from each other. Travelling is now 4 as an important part of education.
- | | | | |
|-------------------|------------------|----------------|------------------|
| 1) (A) kayaking | (B) exploring | (C) yachting | (D) snorkelling |
| 2) (A) astounding | (B) accretion of | (C) agreeable | (D) accumulating |
| 3) (A) alienated | (B) divided | (C) segregated | (D) enumerated |
| 4) (A) noted | (B) considered | (C) regarded | (D) treated |
| a) BDAC | b) ABCD | c) DABC | d) BADC |

Choose the right form of the verb. (Q.No.98 to Q.No.100)

98. Surekha was _____ to the broadcast.
 a) listen b) listens c) listening d) listened
99. The river has _____ its banks.
 a) overflow b) overflowed c) overflowing d) overflown
100. We are _____ to Delhi.
 a) went b) go c) gone d) going

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