



|| Jai Sri Gurudev ||

BGSKH Education Trust(R.) - A unit of Sri Adichunchanagiri Shikshana Trust(R.)
BGS College Of Engineering and Technology



VTU - Model & Oct 2023 - Exam Question Papers

Chemistry Cycle





||Jai Sri Gurudev ||
BGSKH Education Trust (R.) – A unit of Sri Adichunchanagiri Shikshana Trust(R.)
BGS College of Engineering and Technology
Mahalakshmpuram, West of Chord Road, Bengaluru-560086
(Approved by AICTE, New Delhi and Affiliated to VTU, Belagavi)

Chemistry Cycle 2022-Scheme

Theory Question Papers for 2nd Semester

Sl,No	Name of the Subject
1	Mathematics for CSE Stream-02
2	Applied Chemistry for CSE Stream
3	Introduction to Electronics & Communication
4	Introduction to Python Programming
5	Scientific Foundation of Health
6	Professional Writing Skills in English
7	Indian Constitution
8	Computer Aided Engineering Drawing

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Second Semester B.E./B.Tech. Degree Examination, June/July 2023
Mathematics – II for CSE Stream

Time: 3 hrs.

Max. Marks: 100

- Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
 2. VTU Formula Hand Book is permitted.
 3. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1			M	L	C
Q.1	a.	Evaluate $\int_0^1 \int_0^{\sqrt{1-x^2}} \int_0^{\sqrt{1-x^2-y^2}} xyz \, dz \, dy \, dx$.	7	L2	CO1
	b.	Evaluate by changing the order of integration $\int_0^a \int_0^a \frac{x}{x^2 + y^2} \, dx \, dy$.	7	L3	CO1
	c.	Show that $\beta(m,n) = \frac{\Gamma(m)\Gamma(n)}{\Gamma(m+n)}$.	6	L2	CO1
OR					
Q.2	a.	Evaluate $\int_{-2}^2 \int_0^{\sqrt{4-x^2}} (2-x) \, dy \, dx$ by changing into polar coordinates.	7	L3	CO1
	b.	A pyramid is bounded by three coordinate planes and the plane $x + 2y + 3z = 6$. Compute the volume by double integration.	7	L3	CO1
	c.	Using Mathematical tools, write the code to find the area of the cardioids $r = a(1 + \cos \theta)$ by double integration.	6	L3	CO5
Module – 2					
Q.3	a.	Show that the two surfaces $xz + y + z^2 = 9$ and $z = 4 - 4xy$ at $(1, -1, 2)$ are orthogonal.	7	L3	CO2
	b.	If $F = \text{grad}(xy^3z^2)$, find $\text{div}F$ and $\text{curl}F$ at the point $(1, -1, 1)$.	7	L2	CO2
	c.	Prove that the cylindrical coordinate system is orthogonal.	6	L3	CO2
OR					
Q.4	a.	Find the directional derivative of $\phi = x \log z - y^2 + 4$ at $(-1, 2, 1)$ in the direction of the vector $2i - j - 2k$.	7	L2	CO2
	b.	Find the constants a, b and c such that $F = (axy - z^3)i + (bx^2 + z)j + (bxz^2 + cy)k$ is irrotational.	7	L2	CO2
	c.	Using the Mathematical tools, write the codes to find the gradient of $\phi = xy^2z^3$.	6	L3	CO5
1 of 3					

Module - 3

Q.5	a.	Let $W = \{(x, y, z) \mid lx + my + nz = 0\}$, then prove that W is a subspace of \mathbb{R}^3 .	7	L2	CO3
	b.	Find the basis and the dimension of the subspace spanned by the vectors $\{(2, 4, 2), (1, -1, 0), (1, 2, 1), (0, 3, 1)\}$ in $V_3(\mathbb{R})$.	7	L2	CO3
	c.	Prove that $T : \mathbb{R}^3 \rightarrow \mathbb{R}^3$ be defined by $T(x, y, z) = (2x - 3y, x + 4, 5z)$ is not a linear transformation.	6	L3	CO3

OR

Q.6	a.	Show that the matrix $E = \begin{bmatrix} -1 & 7 \\ 8 & -1 \end{bmatrix}$ lies in the sub space span $\{A, B, C\}$ of vector space M_{22} of 2×2 matrices, where $A = \begin{bmatrix} 1 & 0 \\ 2 & 1 \end{bmatrix}$, $B = \begin{bmatrix} 2 & -3 \\ 0 & 2 \end{bmatrix}$ and $C = \begin{bmatrix} 0 & 1 \\ 2 & 0 \end{bmatrix}$.	7	L2	CO3
	b.	Verify the Rank-nullity theorem for the linear transformation $T : \mathbb{R}^3 \rightarrow \mathbb{R}^3$ defined by $T(x, y, z) = (x + 2y - z, y + z, x + y - 2z)$.	7	L3	CO3
	c.	Define an Inner product space. Consider $f(t) = 4t + 3$, $g(t) = t^2$, the inner product $\langle f, t \rangle = \int_0^1 f(t)g(t)dt$. Find $\langle f, g \rangle$ and $\ g\ $.	6	L2	CO3

Module - 4

Q.7	a.	Find the real root of the equation $x \log_{10} x - 1.2$ by the Regula-Falsi method between 2 and 3. (Carryout three iterations).	7	L2	CO4												
	b.	From the following table, estimate the number of students who have obtained the marks between 40 and 45.	7	L2	CO4												
		<table border="1"> <thead> <tr> <th>Marks</th> <th>30 - 40</th> <th>40 - 50</th> <th>50 - 60</th> <th>60 - 70</th> <th>70 - 80</th> </tr> </thead> <tbody> <tr> <td>Number of students</td> <td>31</td> <td>42</td> <td>51</td> <td>35</td> <td>31</td> </tr> </tbody> </table>	Marks	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80	Number of students	31	42	51	35	31			
Marks	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80												
Number of students	31	42	51	35	31												
	c.	Compute the value of $\int_{0.2}^{1.4} (\sin x - \log x + e^x) dx$ using Simpson's $\frac{3}{8}$ rule taking six parts.	6	L3	CO4												

OR

Q.8	a.	Using Newton-Raphson method compute the real root of the equation $x \sin x + \cos x = 0$ near $x = \pi$, correct to four decimal places.	7	L2	CO4
	b.	If $y(0) = -12$, $y(1) = 0$, $y(3) = 6$ and $y(4) = 12$, find the Lagrange's interpolation polynomial and estimate $y(2)$.	7	L2	CO4
	c.	Evaluate $\int_0^3 \frac{dx}{4x + 5}$ using Trapezoidal rule by taking 7 ordinates.	6	L3	CO4

Module - 5

Q.9	a.	Employ Taylor's series method to obtain $y(0.1)$ for $\frac{dy}{dx} = 2y + 3e^x$, $y(0) = 0$ considering upto 4 th degree terms.	7	L2	CO4
	b.	Using Runge-Kutta method of fourth order, solve $y' = \log_{10} \left[\frac{y}{1-x} \right]$ given $y(0) = 1$ at $x = 0.2$	7	L3	CO4

	c.	Solve $\frac{dy}{dx} = 2e^x - y$, $y(0) = 2$, $y(0.1) = 2.010$, $y(0.2) = 2.040$, $y(0.3) = 2.090$, find $y(0.4)$ using Milne's method.	6	L2	CO4										
OR															
Q.10	a.	Given $\frac{dy}{dx} = x + \sqrt{y}$, $y(0) = 1$. Compute $y(0.4)$ with $h = 0.2$ using Euler's modified method. Perform two modifications in each stage.	7	L2	CO4										
	b.	Apply Milne's predictor-corrector formulae to compute $y(4.5)$, given that $5x \frac{dy}{dx} = 2 - y^2$ and	7	L2	CO4										
		<table border="1" style="margin-left: 40px;"> <tr> <td>x</td> <td>4.1</td> <td>4.2</td> <td>4.3</td> <td>4.4</td> </tr> <tr> <td>y</td> <td>1.0049</td> <td>1.0097</td> <td>1.0143</td> <td>1.0187</td> </tr> </table>	x	4.1	4.2	4.3	4.4	y	1.0049	1.0097	1.0143	1.0187			
x	4.1	4.2	4.3	4.4											
y	1.0049	1.0097	1.0143	1.0187											
	c.	Using modern mathematical tools, write the code to find the solution of $\frac{dy}{dx} = x - y^2$ at $y(0.2)$. Given that $y(0) = 1$ by Runge-Kutta 4 th order method. (Take $h = 0.2$)	6	L3	CO5										

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BMATS101

First Semester B.E./B.Tech. Degree Examination, June/July 2023 Mathematics-I for CSE Stream

Time: 3 hrs.

Max. Marks: 100

- Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. VTU Formula Hand Book is permitted.
3. M : Marks , L: Bloom's level , C: Course outcomes.*

Module - 1			M	L	C
Q.1	a.	With usual notations prove that $\tan\phi = r \frac{d\theta}{dr}$	06	L2	CO1
	b.	Find the angle between the curves $r^n = a^n \cos n\theta$ and $r^n = b^n \sin n\theta$	07	L2	CO1
	c.	Find the radius of curvature for $\sqrt{x} + \sqrt{y} = \sqrt{a}$ at $[a/4, a/4]$	07	L3	CO1
OR					
Q.2	a.	With usual notations prove that $\rho = \frac{(1+y_1^2)^{3/2}}{y_2}$	07	L2	CO1
	b.	Obtain pedal equation for the curve $r^n = a^n \cos n\theta$	08	L2	CO1
	c.	Using modern mathematical tool write a program/code to plot the curve $r = 2 \cos 2\theta $	05	L3	CO5
Module - 2					
Q.3	a.	Expand $\text{Log}(\cos x)$ by Maclaurin's series upto term containing x^6	06	L2	CO2
	b.	If $u = f\left(\frac{x}{y}, \frac{y}{z}, \frac{z}{x}\right)$, show that $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} + z \frac{\partial u}{\partial z} = 0$	07	L2	CO2
	c.	Find the extreme values of the function $x^3 + y^3 - 3x - 12y + 20$	07	L3	CO2
OR					
Q.4	a.	Evaluate $\lim_{x \rightarrow 0} \left(\frac{a^x + b^x + c^x + d^x}{4} \right)^{1/x}$	07	L2	CO3
	b.	If $u = \frac{yz}{x}$, $v = \frac{zx}{y}$, $w = \frac{xy}{z}$, show that $\frac{\partial(u, v, w)}{\partial(x, y, z)} = 4$	08	L2	CO3
	c.	Using modern mathematical tool write a program/code to show that $u_{xx} + u_{yy} = 0$ give $u = e^x (x \cos y - y \sin y)$	05	L2	CO5
Module - 3					
Q.5	a.	Solve: $x \frac{dy}{dx} + y = x^3 y^6$	06	L2	CO3
	b.	Find the orthogonal trajectories of the family of the curves $r^n \sin n\theta = a^n$ where 'a' is parameter.	07	L3	CO3
	c.	Solve: $xyp^2 - (x^2 + y^2)p + xy = 0$	07	L2	CO3
OR					

Q.6	a.	Solve $(x^2 + y^3 + 6x)dx + y^2x dy = 0$	06	L2	CO3
	b.	Find the general and singular solutions of $xp^2 + xp - yp + 1 - y = 0$	07	L3	CO3
	c.	Find the general solution of the equation $(px - y)(py + x) = 2p$ by reducing into Clairaut's form by taking the substitution $X = x^2, Y = y^2$.	07	L2	CO3
Module - 4					
Q.7	a.	Find the least positive values of 'x' such that i) $78 + x \equiv 3 \pmod{5}$ ii) $89 \equiv (x + 3) \pmod{4}$	06	L2	CO4
	b.	Find the solution of the linear congruence $14x \equiv 12 \pmod{18}$	07	L2	CO4
	c.	Encrypt the message STOP using RSA with key (2537, 13) using the prime numbers 43 and 59.	07	L2	CO4
OR					
Q.8	a.	i) Find the remainder when 2^{23} is divided by 47. ii) Find the last digit in 7^{118} .	06	L2	CO4
	b.	Solve the system of linear congruence $x \equiv 2 \pmod{3}; x \equiv 3 \pmod{5}; x \equiv 2 \pmod{7}$ using Remainder Theorem.	07	L2	CO4
	c.	i) Find the remainder when $175 \times 113 \times 53$ is divided by 11. ii) Solve $x^3 + 2x - 3 \equiv 0 \pmod{9}$	07	L2	CO4
Module - 5					
Q.9	a.	Find the rank of the matrix $A = \begin{bmatrix} 2 & 3 & -1 & -1 \\ 1 & -1 & -2 & -4 \\ 3 & 1 & 1 & 3 \\ 6 & 3 & 0 & -7 \end{bmatrix}$	06	L2	CO4
	b.	Test for consistency and solve $2x + 5y + 7z = 52; 2x + y - z = 0; x + y + z = 9.$	07	L2	CO4
	c.	Using Rayleigh's power method find the dominant eigen value and the corresponding eigen vector of $\begin{bmatrix} 6 & -2 & 2 \\ -2 & 3 & -1 \\ 2 & -1 & 3 \end{bmatrix}$ by taking $X_0 = \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix}$.	07	L2	CO4
OR					
Q.10	a.	Solve the system of equations $x + 2y - z = 3; 3x - y + 2z = 1; 2x - 2y + 3z = 2$ by using Gauss-Jordan method.	07	L2	CO4
	b.	Solve the system of equations $20x + y - 2z = 17, 3x + 20y - z = -18; 2x - 3y + 20z = 25$ by using Gauss - Seidel method.	08	L2	CO4
	c.	Using modern mathematical tool write a program/code to find the largest eigen value of $A = \begin{bmatrix} 1 & 1 & 3 \\ 1 & 5 & 1 \\ 3 & 1 & 1 \end{bmatrix}$ by power method.	05	L3	CO5

CBCS SCHEME

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First/Second Semester B.E./B.Tech. Degree Examination, June/July 2023 Applied Chemistry for CSE Stream

Max. Marks: 100

Time: 3 hrs.

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. VTU Formula Hand Book is permitted.
3. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1				M	L	C
Q.1	a.	What are sensors? Explain how Electrochemical gas sensors used to detect SO _x and NO _x gases.	07	L1	CO1	
	b.	With a neat sketch explain the measurement of dissolved oxygen by electro-chemical sensors.	06	L1	CO1	
	c.	Explain the construction and working of Li-ion battery. Write the charging and discharging reaction.	07	L1	CO1	
OR						
Q.2	a.	Explain the construction and working of sodium ion battery. Write the charging and discharging reaction.	07	L1	CO1	
	b.	Explain the detection of pharmaceutical pollutant dichlofenac using electrochemical sensor.	07	L1	CO1	
	c.	What are disposable sensors? Explain the detection of ascorbic acid. Write the oxidation reaction.	06	L1	CO1	
Module – 2						
Q.3	a.	What are memory device? Briefly explain the classification of memory device.	07	L1	CO1	
	b.	Explain organic memory devices of p-type and n-type by taking example of Pentacene.	06	L2	CO1	
	c.	Discuss the application of liquid crystals in display devices.	07	L2	CO1	
OR						
Q.4	a.	What are Photoactive and Electroactive material? Briefly discuss their role in opto-electronic devices.	07	L1	CO1	
	b.	What are liquid crystals? Briefly explain the classification of liquid crystals with example.	07	L2	CO1	
	c.	Discuss the application of Polyimide Polymeric material for organic memory device.	06	L1	CO1	
Module – 3						
Q.5	a.	What is corrosion? Explain Electrochemical theory of corrosion taking iron as example.	07	L2	CO3	

	b.	What are reference electrodes? Explain the construction and working of calomel electrode.	07	L2	CO3
	c.	Two cadmium rods immersed in Cadmium Sulphate solution of concentration 0.002 M and 0.4 M. Write the cell representation, cell reaction and calculate the EMF at 25°C.	06	L2	CO3
OR					
Q.6	a.	What are ion selective electrode? Explain the determination of pH of an unknown solution using glass electrode.	07	L1	CO3
	b.	What is anodizing? Explain the anodizing of aluminium.	07	L1	CO3
	c.	A thick steel sheet of area 450 cm ² is exposed to air near ocean. After one year it was found to experience a weight loss of 385g due to corrosion. Calculate the rate of corrosion in mpy and mmpy. [Density of specimen 7.9 g/cm ³ , k = 534 for mpy and k = 87.6 for mmpy]	06	L1	CO3
Module – 4					
Q.7	a.	Discuss the conduction mechanism of Polyacetylene.	07	L1	CO4
	b.	With a neat sketch, explain the generation of Hydrogen by Alkaline Electrolysis of water.	07	L1	CO4
	c.	In a polymer sample 20% of molecules have molecular mass 15000 g/mol, 35% molecules have molecular mass 25000 g/mol and remaining percentage have molecular mass 20000 g/mol. Calculate number average and weight average molecular mass of the polymer	06	L1	CO4
OR					
Q.8	a.	What are PV cell? Explain the construction and working of PV cell.	07	L2	CO4
	b.	Explain the preparation, properties and application of graphene oxide.	07	L2	CO4
	c.	What is green fuel? Mention the advantages of green fuel.	06	L2	CO4
Module – 5					
Q.9	a.	What are e-waste? Explain the sources and composition of e-waste.	06	L1	CO5
	b.	Discuss the various steps involved in recycling of e-waste.	07	L1	CO5
	c.	Write a note on various stakeholders in e-waste management.	07	L2	CO5
OR					
Q.10	a.	Explain the various steps involved in extraction of gold from e-waste.	07	L2	CO5
	b.	Discuss the extraction of metals from e-waste by pyrometallurgy.	07	L2	CO5
	c.	What are the toxic metal used in electrical and electronics products? Discuss their ill effects.	06	L1	CO5

CBCS SCHEME

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BESCK204C

Second Semester B.E./B.Tech. Degree Examination, June/July 2023 Introduction to Electronics and Communication

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module - 1				M	L	C
Q.1	a.	What is Regulated Power Supply? With neat block diagram, explain the working of DC power supply. Also mention the principal components used in each block.	8	L2	CO1	
	b.	What is an Amplifier? Explain the types of Amplifier.	4	L2	CO1	
	c.	With neat circuit diagram and wave forms explain full wave bridge rectifier.	8	L2	CO1	
OR						
Q.2	a.	What is Voltage Regulator? With neat circuit diagram, explain the operation of a voltage regulator using Zener diode.	7	L2	CO1	
	b.	Mention the advantages of negative feedback in amplifier circuits. With relevant equations and diagram, explain the concept of negative feedback.	7	L2	CO1	
	c.	What is Voltage Multiplier? With circuit diagram, explain the operation of voltage doubler.	6	L2	CO1	
Module - 2						
Q.3	a.	What is Op - Amp? Explain the various parameters of Operational Amplifier.	7	L2	CO2	
	b.	Sketch the circuits of each of the following based on the use of Op - amp along with input and output wave forms : i) Integrator ii) Voltage follower iii) Comparator.	7	L2	CO2	
	c.	Explain the operation of three - stage ladder RC Network Oscillator with neat circuit diagram.	6	L2	CO2	
OR						
Q.4	a.	Explain the Barkhausen criteria for Oscillations. In wein bridge oscillator if $C_1 = C_2 = 100 \text{ nF}$, determine the frequency of oscillations when $R_1 = R_2 = 1\text{k}\Omega$.	7	L3	CO2	
	b.	Explain the operation of Single stage Astable multivibrator with its circuit diagram.	7	L2	CO2	
	c.	Explain the Ideal characteristics of an Op - amp.	6	L2	CO2	

Module – 3			
Q.5	a.	Convert the following : i) $(1AD.E0)_{16} = (?)_{10}$ ii) $(37.625)_{10} = (?)_2$ iii) $(110100111001.110)_2 = (?)_8$ iv) $(345.AB)_{16} = (?)_{10}$	8 L3 CO3
	b.	State and prove De – Morgan's theorems with its truth table.	6 L2 CO3
	c.	Implement the following Boolean functions by using logic gates : i) $F_1 = xy' + x'z$ ii) $F_2 = x'y'z + x'yz + xy'$	6 L3 CO3
OR			
Q.6	a.	Perform the following : i) $(1010100)_2 - (1000100)_2$ using 1's complement and 2's complement method. ii) $(4456)_{10} - (34234)_{10}$ using 9's complement and 10's complement method.	8 L3 CO3
	b.	Implement full adder circuit with its truth table and write the expressions for sum and carry.	6 L3 CO3
	c.	Express the Boolean function $F = A + B' C$ in a sum of min terms.	6 L3 CO3
Module – 4			
Q.7	a.	What is an Embedded system? Compare Embedded system and General computing system.	7 L2 CO4
	b.	Using suitable diagrams, explain Instrumentation and Control System.	7 L2 CO4
	c.	Discuss major application areas of Embedded systems with examples.	6 L2 CO4
OR			
Q.8	a.	Write a note on Core of Embedded systems with its block diagram.	7 L2 CO4
	b.	Explain how 7 seg LED display can be used to display the data and write a brief note on operation of LED.	7 L2 CO4
	c.	Explain the classification of Embedded systems.	6 L2 CO4
Module – 5			
Q.9	a.	Describe the blocks of Modern Communication System with neat block diagram.	8 L2 CO5
	b.	Explain with a neat diagram, the concept of Radio wave propagation and its different types.	7 L2 CO5
	c.	Explain different Multiple Access Techniques.	5 L2 CO5
OR			
Q.10	a.	What is Modulation? Explain Amplitude Modulation (AM) and Frequency Modulation (FM), with neat waveforms.	8 L2 CO5
	b.	List the advantages of Digital Communication over Analog Communication.	6 L2 CO5
	c.	Explain the following with the help of waveforms : i) ASK ii) FSK iii) PSK.	6 L2 CO5

CBCS SCHEME

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BPLCK205B/BPLCKB205

Second Semester B.E./B.Tech. Degree Examination, June/July 2023

Introduction to Python Programming

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module - 1			M	L	C
Q.1	a.	Demonstrate with example print (), input () and string replication.	6	L3	CO1
	b.	Develop a program to generate Fibonacci square of length (N). Read N from the console.	6	L3	CO1
	c.	Explain elif, for, while, break and continue statements in python with examples for each.	8	L2	CO1
OR					
Q.2	a.	What are user defined functions? How can we pass parameters in user defined functions? Explain with suitable example.	5	L1	CO1
	b.	Explain Local and Global scope with variables for each.	8	L2	CO1
	c.	Develop a program to read the name and year of birth of a person. Print whether the person is a senior citizen or not.	7	L3	CO1
Module - 2					
Q.3	a.	What is a List? Explain append (), insert () and remove () methods with examples.	8	L2	CO2
	b.	Explain the following methods with example : i) keys () ii) values () iii) items () in a dictionary.	12	L2	CO2
OR					
Q.4	a.	How is tuple different from a list and which function is used to convert list to tuple? Explain.	6	L2	CO2
	b.	List the merits of dictionary over list.	4	L1	CO2
	c.	Read N numbers from the console and create a list. Develop a program to compute and print mean, variance and standard deviation with messages.	10	L3	CO2
Module - 3					
Q.5	a.	Explain the following methods with suitable examples : i) upper () ii) lower () iii) is_upper () iv) is_lower ()	8	L2	CO3
	b.	Illustrate with example opening of a file with open () function, reading the contents of the file with read () and writing to files with write ().	12	L2	CO3

OR

Q.6	a.	Explain the steps involved in adding bullets to Wiki – Markup. Support with appropriate code.	10	L2	CO3
	b.	Develop a program to sort the contents of a text file and write the sorted contents into a separate text file. [Use strip (), len (), list methods sort (), append and file methods open (), readlines () and write ()].	10	L3	CO3

Module – 4

Q.7	a.	How do you copy files and folders using Shutil module? Explain in detail.	6	L2	CO3
	b.	What are Assertions? Write the contents of an assert statement. Explain them with examples.	8	L2	CO3
	c.	Illustrate the logging levels in python.	6	L2	CO3

OR

Q.8	a.	With suitable code, explain Backing up a Folder into a Zip file. Clearly mention the steps involved.	12	L2	CO3
	b.	Explain the logging module and debug the factorial of number program.	8	L3	CO3

Module – 5

Q.9	a.	What is a Class? How to define class in Python? How to initiate a class and how the class members are accessed?	8	L2	CO4
	b.	Define Pure function. Illustrate with an example Python program.	8	L3	CO4
	c.	Explain Printing objects.	4	L1	CO4

OR

Q.10	a.	What is Polymorphism? Demonstrate polymorphism with functions to find histogram to count the numbers of times each letters appears in a word and in sentence.	10	L3	CO4
	b.	Write Deck methods to add, remove shuffle and sort cards, with illustrating the problem.	10	L2	CO4

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Question Paper Version : A

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2023
Scientific Foundation of Health

Time: 1 hr.1

[Max. Marks: 50]

INSTRUCTIONS TO THE CANDIDATES

- Answer all the fifty questions, each question carries one mark.
 - Use only **Black ball point pen** for writing / darkening the circles.
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- What is health?
 - Physical wellbeing
 - Mental wellbeing
 - Social wellbeing
 - All of the above
 - Important roles of health are
 - Fighting disease
 - Feeling happy
 - Enjoy life
 - All of the above
 - As per WHO health is defined as a state of complete
 - Physical Wellbeing
 - Mental wellbeing
 - Social wellbeing
 - Physical, mental, social wellbeing
 - Wellness is
 - Positive approach
 - Negative approach
 - Positive or Negative approach
 - Positive and Negative approach
 - Wellness dimensions are
 - 4
 - 2
 - 6
 - 8
 - Intellectual wellness includes
 - Eating balanced diet
 - Having good nutrition
 - Drinking sufficient water
 - Mental exercise
 - Physical health enhances
 - Heart function
 - Breathing
 - Both a and b
 - None of these
 - Influencing factors of health are
 - Social, economic, political factor
 - Social factor only
 - Economical factor only
 - Political factor only
- Factor which influence health are
 - Individual factor
 - Individual behavior
 - Public service and infrastructure
 - All of the above
 - Psychologic disorders are
 - Anxiety, depression, stress
 - Stress, Anxiety
 - Depression, anxiety
 - None of the above
 - BMI stands for
 - Body mass index
 - Body material index
 - Body mass index
 - None of the above
 - Overweight in BMI is (Kg/m²)
 - > 30
 - > 25
 - < 25
 - < 30
 - Cause of obesity and overweight
 - Energy imbalance
 - Energy imbalance
 - Energy balance between calories consumed and calories expended
 - None of the above
 - Hyper obesity value in terms of BMI (in Kg/m²)
 - > 25
 - < 25
 - > 40
 - < 40
 - Hyper is definition of overweight?
 - BMI > 25 Kg/m²
 - BMI = 25 Kg/m²
 - BMI 25 - 29.9 Kg/m²
 - BMI 25 - 30 Kg/m²
 - Which of the following disease does obesity increase the risk of developing?
 - Type 2 diabetes
 - High blood pressure
 - Cardiovascular diseases
 - All of the above
 - Communication is part of ----- skill
 - Soft
 - Hard
 - Rough
 - Short
 - Communication barriers involves
 - Jumping into conclusion
 - Arguing and debating
 - Fear of offending
 - All of the above
 - Way to improve communication skill are
 - Active listening skills
 - Passive listening skills
 - Both a and b
 - None of the above
 - Goals of communication are
 - To inform, to persuade
 - To inform
 - To persuades, Fear of offending
 - None of the above
 - Objective of communication skills are
 - Active listening skills
 - Aware of own communication
 - Both a and b
 - None of the above
 - What are the steps to improve the vocal clarity?
 - Keep your language simple
 - slow down
 - Both a and b
 - Feedback

23. How one can improve the communication skills?
 a) listen with willingness
 b) Respond appropriately
 c) Provide feedback
 d) All of the above
24. Body language plays an important role in
 a) Communication
 b) Judgment
 c) Both a and b
 d) None of the above
25. What is the goal of social engineering?
 a) Sabotage a person's social media
 b) To gain vital personal information
 c) To build trust
 d) To catfish someone
26. Attitude play an important role in
 a) Communication
 b) Judgment
 c) Both a and b
 d) None of the above
27. Using abbreviation in communication leads to which type of communication barrier?
 a) Language
 b) Physical
 c) Cultural
 d) Organizational
28. Why communication is key to healthy relationship?
 a) Get to know each other
 b) Avoid misunderstanding
 c) Set clear expectations
 d) All of the above
29. Bad examples of communication are
 a) Belittling others
 b) Openly giving cold shoulders
 c) Both a and b
 d) None of the above
30. What are the basic instinct of life?
 a) Self-preservation
 b) Social instinct
 c) Both a and b
 d) None of the above
31. How addiction can be indentified?
 a) Lack of control
 b) Decreased socialization
 c) Both a and b
 d) None of the above
32. SUD stand for
 a) Substance use disorders
 b) Substance use disease
 c) Substance usage development
 d) None of the above
33. Characteristics of health compromising behaviour
 a) Thrill seeking behaviour
 b) Produce pleasurable effect
 c) Act as stress reducing agent
 d) All of the above
34. How to recognize addiction behaviour?
 a) Inability to stay away from substance
 b) Ignore other area of life
 c) Both a and b
 d) None of the above
35. Quality of a true friend are
 a) Respectful
 b) Believes in you
 c) Make time for you
 d) All of the above
36. Friendship in education is
 a) Respectful
 b) Believes in you
 c) Make time for you
 d) Better cooperation
37. Nature of friendship is
 a) Friends must enjoy each other company
 b) Not supporting
 c) Make time for oneself
 d) Little cooperation
38. What is the recommendable daily intake of water
 a) 0.5 litre
 b) 1 litre
 c) 2 litre
 d) None of the above

39. What is the general sleep requirements for adults?
 a) 8 to 12 hours
 b) 12 to 14 hour
 c) 7 to 9 hour
 d) None of the above
40. Which vitamins is good for eyes?
 a) Vitamin D
 b) Vitamin E
 c) Vitamin A
 d) None of the above
41. How many minutes should an average person walk a day?
 a) 30 minutes
 b) 40 minutes
 c) 20 minutes
 d) None of the above
42. What is the essential first step to a healthier lifestyle?
 a) Taking more vitamins
 b) Making the decision to abstinent from street drug
 c) Exercising regularly to the point of exhaustion
 d) None of the above
43. Behavioral addiction can include
 a) Gambling
 b) Alcohol
 c) Inhalants
 d) Medication
44. Effects and health hazards from addictions causes complication of
 a) physical
 b) psychological
 c) personal
 d) All of the above
45. Three things which are necessary for an infection to occurs
 a) source
 b) susceptible person with a way for germs to enter the body
 c) Transmission
 d) All of the above
46. Management of chronic illness for quality of life
 a) Sleep
 b) Happiness
 c) Mental health
 d) All of the above
47. Community based services to offer support in substance abuse consists of self help services such as?
 a) Alcoholic anonymous
 b) Crack crack
 c) Cannabis collective
 d) Hashish home
48. This causes the maximum accumulation of fat in the liver
 a) Meat + egg
 b) Alcohol
 c) Saturated fat
 d) Starch
49. Symptoms of chronic diseases
 a) Tiredness, aches, pains are not often visible
 b) Stress
 c) Anxiety
 d) None of the above
50. What is pain management?
 a) Taking pain relieving medicine
 b) Relaxation
 c) Both a and b
 d) None of the above

CBCS SCHEME

BPWSK106/206

USN

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Question Paper Version : A

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2023 Professional Writing Skills in English

Time: 1 hr.]

[Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** 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.**
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Fill in the blank with proper phrasal verb from Q1 to Q5.

1. Would you _____ my dog for me this weekend?
a) look b) lookafter c) lookup d) look on
2. My neighbour _____ eggs yesterday.
a) ran b) ran out of c) ran into d) ran in
3. John _____ his leg at the baseball game.
a) broke b) broke down c) broke off d) broke on
4. Our boss _____ our meeting until next week.
a) put b) put off c) put down d) put on
5. Could you _____ the music while I am on the phone?
a) turn b) turn off c) turn around d) turn in
6. Find the proper noun in the sentence :
'Riya took the dog to the park.'
a) Riya b) Dog c) Park d) All of these
7. Find the common noun in :
'The girl arrived in the state last week.'
a) girl b) state c) week d) All three
8. Find abstract noun in :
'The Theatre was engulfed in darkness.'
a) Theatre b) darkness c) engulfed d) None of these

9. What is the emphatic form of pronoun 'I'?
- a) I b) Me c) Mine d) Myself
10. What is the subjective form of pronoun 'He'?
- a) He b) His c) Him d) Himself
11. What is the objective form of pronoun 'She'?
- a) Hers b) Herself c) Her d) She
12. What is the reflexive form of pronoun 'They'?
- a) Themselves b) Their c) They d) Them
13. What is the possessive form of the pronoun 'Who'?
- a) Who b) Whom c) Whose d) Which
14. Rahul is an intelligent boy. Here the adjective is _____
- a) Rahul b) intelligent c) boy d) None of these
15. Sahil keenly examined the ball. Here the adverb is _____
- a) Sahil b) keenly c) the ball d) examined
16. Punctilious (Choose the word with closest meaning)
- a) Meticulous b) Casual c) Final d) None of these
17. Opulence (What is the closest meaning?).
- a) Poverty b) Penury c) Affluence d) Indigence
18. Momentous (Tick the word having closest meaning.)
- a) Mesmerising b) Stormy c) Memorable d) Magnificent

Fill in the blank with proper verb form (Q.No.19 to Q.No.23)

19. She has _____ the highest marks in Mathematics.
- a) score b) scored c) scoring d) None of these
20. The phone _____ for last two minutes.
- a) is ringing b) rings c) has been ringing d) rang
21. Did you _____ that your gold chain was missing.
- a) notice b) noticed c) noticing d) notices
22. I rarely _____ junk food.
- a) eats b) eat c) eating d) eaten
23. I _____ upstairs and called my grandfather.
- a) goes b) going c) went d) go

Choose the right preposition. (Q.No.24 to Q.No.28)

24. Do not boast _____ your Health.
- a) of b) in c) for d) about
25. The Lame man lives _____ begging.
- a) with b) from c) by d) on

36. One should not give unsolicited advice.
 a) Unsolicited advice is not to be given
 b) Unsolicited advice can't be given
 c) Unsolicited advice should not be given
 d) Unsolicited advice may not be given

37. The boys elected Mohan Captain.
 a) The boys were elected captain by Mohan.
 b) Mohan is elected captain by the boys.
 c) Mohan was elected captain by the boys.
 d) Mohan and the boys elected the captain.

Tick the correct indirect form of the sentence given. (Q.No.38 to Q.No.40)

38. "I am going to search the house" said the officer.
 a) The officer said that he is going to search the house.
 b) The officer said that he was going to search the house.
 c) The officer said that I am going to search the house.
 d) None of these
39. "Don't Smoke", she told me.
 a) She told me that not smoke. b) She told me not to smoke.
 c) She told me to smoke. d) She told me Do not smoke.
40. "She's never been here before", He said.
 a) He said that he has never been there before.
 b) He said that she had never been there before.
 c) She said that he had never been there before.
 d) He said that she had never been here before.

Each question consists of two words which have a certain relationship to each other followed by four pairs of related words, select the pair which has the same relationship. (Q.No.41 to 43)

41. DIVA : OPERA
 a) Producer : Theatre b) Director : Drama
 c) Conductor : Bus d) Thespian : Play
42. PAIN : SEDATIVE
 a) Comfort : Stimulant b) Grief : Consolation
 c) Trance : Narcotic d) Ache : Extraction
43. LIGHT : BLIND
 a) Speech : Dumb b) Language : Deaf
 c) Tongue : Sound d) All of these
44. What are the good qualities of the precise writing?
 a) clarity and completeness b) correctness and conciseness
 c) objectivity and coherence d) All of these

45. What kind of words are not suitable in a precis?
a) Suggested, advised and questioned b) Requested, honoured and awarded
c) Plz, becoz, bt, etc. d) None of these
46. Which of the following protocols is used to receive email?
a) SMTP b) HTTP c) FTP d) POP3
47. Which of the following statements is incorrect with respect to writing emails?
a) We can not add more than one address in the 'To' field
b) We can leave the 'BCC' field blank
c) We can leave the 'CC' field blank
d) The 'To' and 'CC' fields are often used interchangeably
48. What are the types of paragraph writing?
a) Narrative, Persuasive b) descriptive
c) Expository d) All of above.
49. A paragraph is a group of sentences that talk about
a) one topic b) two topic
c) multiple topic d) Both a and c
50. Your Resume is a tool with one specific purpose :
a) To get a job b) To win an interview
c) To discuss salary d) To know about work

USN

Question Paper Version : A

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2023

Indian Constitution

Time: 1 hr.]

(Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

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1. Who acted as the chairman of the drafting committee of the constituent assembly?
 - a) B. R. Ambedkar
 - b) C. Rajagopalachari
 - c) Rajendra Prasad
 - d) Jawaharlal Nehru
2. The Constituent Assembly set up under the Cabinet Mission plan had a strength of
 - a) 389 members
 - b) 501 members
 - c) 268 members
 - d) 492 members.
3. On December 11, 1946 the Constituent Assembly elected _____ as its permanent chairman.
 - a) Jawaharlal Nehru
 - b) Dr. Rajendra Prasad
 - c) Dr. B. R. Ambedkar
 - d) K.M. Munshi
4. The Drafting Committee of the Constitution, including the chairman, comprised of
 - a) 7 members
 - b) 5 members
 - c) 9 members
 - d) 3 members
5. The Constitution of India came into force on
 - a) 26 January 1952
 - b) 16 August 1948
 - c) 26 January 1950
 - d) 26 November 1949
6. Which one of the following exercised the most profound influence on the Indian Constitution?
 - a) The Government of India Act, 1935
 - b) The US Constitution
 - c) British Constitution
 - d) The UN charter
7. How many schedules the Constitution of India contains now?
 - a) 9
 - b) 10
 - c) 11
 - d) 12
8. How many parts has Indian Constitution been divided into, at the time of its commencement?
 - a) 1
 - b) 22
 - c) 21
 - d) 12
9. The Constitution of India is
 - a) Rigid
 - b) Flexible
 - c) Very rigid
 - d) Partly rigid and partly flexible.

10. The Constituent Assembly of India took all decisions by
 - a) Simple Majority
 - b) Two-Thirds majority
 - c) Consensus
 - d) All of these
11. The preamble of Indian Constitution was amended.
 - a) Twice
 - b) Thrice
 - c) Once
 - d) Not amended
12. Which amendment added the words "Secularism, socialist and integrity to the preamble of the constitution"?
 - a) 24th Amendment
 - b) 42nd Amendment
 - c) 44th Amendment
 - d) 73rd Amendment
13. The Constitution of India declares India as
 - a) A unitary state
 - b) Federation
 - c) A quasi-federal state
 - d) A union of states
14. A state where 'Herd of the State' is elected is called.
 - a) Monarchy
 - b) Democracy
 - c) Republic
 - d) Anarchy
15. In which year, did crpps mission come to India?
 - a) 1935
 - b) 1945
 - c) 1949
 - d) 1942
16. Sexual harassment of working - women is violation of
 - a) Fundamental duty
 - b) DPSP
 - c) Fundamental right
 - d) Rule of law
17. Which of the following is no longer a fundamental right?
 - a) Right to liberty
 - b) Right to equality
 - c) Right to freedom of religion
 - d) Right to property.
18. Right to equality under article 14 means
 - a) Treating all people equality
 - b) Equality among equals and not equality among unequals
 - c) Upliftment of SC's and ST's and backward class people
 - d) None of the above.
19. Right to life includes
 - a) Right to die
 - b) Right purchase moveable property
 - c) Right to carry on any business
 - d) Right to get education
20. Restriction cannot be imposed on the right of freedom of speech and expression on the ground of
 - a) Defamation
 - b) Law and order problem
 - c) Incitement of an offence
 - d) Contempt of court
21. The directive principles of state policy direct the state to secure to all the workers.
 - a) Minimal wages
 - b) Fair wages
 - c) Living wages
 - d) Standard wages
22. The aim of the directive principles of state policy is
 - a) To protect the civil rights of the citizens
 - b) To restrain the state from grasping its power and public money
 - c) To promote the general welfare of the society
 - d) To make special rules to protect women.
23. This is not a fundamental duty
 - a) To defend the country
 - b) To develop scientific temper
 - c) To make scientific improvement
 - d) To uphold and protect sovereignty of India.

24. Fundamental duties were incorporated in the constitution on the recommendation of
 a) Karan Singh Committee
 b) Swaran Singh Committee
 c) Charan Singh Committee
 d) Manmohan Singh Committee
25. Who is the Custodian of Fundamental Rights?
 a) Prime Minister of India
 b) Supreme Court and High Court of India
 c) Parliament of India
 d) Five years
26. What is the term of the President of India?
 a) Four years
 b) Three years
 c) Five years
 d) Six years
27. Who will appoint the Attorney General of India?
 a) Prime Minister of India
 b) Chief Justice of India
 c) President of India
 d) Law Minister of Union
28. The number of Ministers in the Central Government is fixed by
 a) The President
 b) The Prime Minister
 c) The Parliament
 d) None of the above
29. Political parties are recognized by
 a) President
 b) Parliament
 c) Supreme Court
 d) Election Commission
30. The Ministers of the union cabinet are answerable to
 a) The Prime Minister
 b) The Lok Sabha
 c) The President
 d) The Vice President
31. Rajya Sabha member has a term of
 a) 5 years
 b) Permanent body
 c) 4 years
 d) 6 years
32. The Vice President of India is elected by the
 a) Members of Lok Sabha
 b) Members of Raj Sabha
 c) Elected Members of Lok Sabha and Raj Sabha
 d) Members of Lok Sabha and Raj Sabha and Members of all Legislative Assemblies
33. A judge of all Supreme Court may be removed on the ground of
 a) Misbehaviour
 b) Delivering repeatedly wrong judgment
 c) Delivering judgments which impede the progress of the Nation
 d) Holding lenient views about anti-social elements
34. This is not the jurisdiction of the Supreme Court
 a) Original jurisdiction
 b) Emergency jurisdiction
 c) Appellate jurisdiction
 d) Advisory jurisdiction
35. Criminal contempt of Court means
 a) An act which lowers the authority of a court
 b) Giving false evidence before a criminal court
 c) Filing a complaint in a court
 d) None of the above
36. The Appellate jurisdiction of the Supreme Court can be divided into
 a) Six main categories
 b) Five main categories
 c) Four main categories
 d) Three main categories.
37. The Supreme Court can issue
 a) Three types of writs
 b) Seven types of writs
 c) Five types of writs
 d) Six types of writs

38. Which of the following is the guardian of the fundamental rights of the citizens?
 a) Supreme Court
 b) The President
 c) Parliament
 d) Lok Sabha
39. Which of the following has the power of judicial review?
 a) High Courts
 b) District Courts
 c) Supreme Court
 d) All of these
40. Who was the first woman judge of Supreme Court?
 a) Meera Kumari
 b) Fathima Beevi
 c) Seeta Sotendwad
 d) No woman has become judge of Supreme Court so far.
41. This is not the function of election commission
 a) Preparation of electoral
 b) Determines code of conduct to candidates
 c) Selection of the candidate
 d) Allotment of symbols
42. 74th Amendment of the Constitution refers to
 a) Rural local bodies
 b) Right to property
 c) Urban local bodies
 d) None of these
43. Which one of the following types of emergency has not declared, till now?
 a) State emergency
 b) National emergency
 c) Financial emergency
 d) None of these
44. President can proclaim an emergency on the ground of
 a) War
 b) Armed rebellion
 c) External aggression
 d) All of these
45. The cabinet mission came to India in
 a) 1944
 b) 1945
 c) 1946
 d) 1943
46. The state Legislative assembly is provoked by
 a) The Chief Minister
 b) The Governor
 c) The speaker of assembly
 d) None of these
47. Creamy layer means
 a) Highly educated persons
 b) Persons holding high posts
 c) Highly cultured persons
 d) Persons having higher incomes
48. Enact means
 a) Single chapter
 b) Single action
 c) Pass a law
 d) Rectify the mistakes is the law
49. Which Constitutional Amendment has brought down the voting age to 18 years?
 a) 61st Amendment
 b) 73rd Amendment
 c) 44th Amendment
 d) 42nd Amendment
50. The Election Commission does not conduct election
 a) To the Parliament
 b) To the office of the President
 c) To the post of Prime Minister
 d) To the office of the Vice-president
