

CBCS SCHEME

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21MATME41

Fourth Semester B.E. Degree Examination, June/July 2023 Complex Analysis, Probability and Linear Programming

Time: 3 hrs.

Max. Marks: 100

- Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Use of Statistical Tables is permitted.*

Module-1

- 1 a. With usual notation, derive the Cauchy's Riemann equations in the polar form. (06 Marks)
b. If $f(z)$ is regular function of z , prove that $\left(\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2}\right)|f(z)|^2 = 4|f'(z)|^2$. (07 Marks)
c. Determine the analytic function whose real part is $u = e^x(x \cos y - y \sin y)$. (07 Marks)

OR

- 2 a. With usual notation, derive the Cauchy's Riemann in the Cartesian form. (07 Marks)
b. Show that $f(z) = \left(r + \frac{k^2}{r}\right) \cos \theta + i \left(r - \frac{k^2}{r}\right) \sin \theta$, $r \neq 0$ is regular function $z = re^{i\theta}$, find $f'(z)$. (06 Marks)
c. Find the analytic function whose real part is $u = \log \sqrt{x^2 + y^2}$. (07 Marks)

Module-2

- 3 a. Discuss the transformation $w = z^2$. (06 Marks)
b. State and prove the Cauchy's integral formula. (07 Marks)
c. Find the bilinear transformation which maps the point $z = 0, 1, \infty$ into the points $w = -5, -1, 3$ respectively. (07 Marks)

OR

- 4 a. Find the bilinear transformation which maps the points $z = 1, i, -1$ to $w = i, 0, -1$. (06 Marks)
b. Verify Cauchy's theorem for the integral of z^2 over the boundary:
(i) Along the st-line $z = 0$ to $z = 3 + i$
(ii) Along the curve made up to two line segments, one from $z = 0$ to $z = 3$ and another from $z = 3$ to $z = 3 + i$. (07 Marks)
c. Evaluate $\oint_c \frac{e^{-z}}{(z-1)^2(z-2)} dz$ where $c: |z| = 3$ (07 Marks)

Module-3

- 5 a. A random variable x has the following probability following various values of x :

x	0	1	2	3	4	5	6	7
P(x)	0	K	2K	2K	3K	K ²	2K ²	7K ² + K

- i) Find K (ii) Evaluate $P(x < 6)$ (iii) $P(3 < x \leq 6)$ (06 Marks)
b. Find the mean and standard deviation of the Poisson distribution. (07 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg, $42+8=50$, will be treated as malpractice.

- c. A communication channel receives independent pulses at the rate of 12 pulses per micro second. The probability of transmission error is 0.001 for each micro second. Compute the probability of
- (i) No error during a micro second (ii) One error (iii) Atleast one error
 (iv) Two error (v) Almost two error (07 Marks)

OR

- 6 a. Find the constant K such that $f(x) = \begin{cases} Kx^2 & 0 < x < 3 \\ 0 & \text{otherwise} \end{cases}$ is a p.d.f. Also compute:
- (i) $P(1 < x < 2)$ (ii) $P(x \leq 1)$ (iii) $P(x > 1)$ (iv) mean and variance (06 Marks)
- b. The marks of 1000 students in an examination follows a normal distribution with mean 70 and S.D. is 5. Find the number of students whose marks will be:
- (i) Less than 65 (ii) More than 75 (iii) Between 65 and 75 (07 Marks)
- c. The length of telephone conversation in booth has been an exponential distribution and found an average, to be 5 minutes. Find the probability that a random call made from this booth (i) ends less than 5 min (ii) In between 5 and 10 min. (07 Marks)

Module-4

- 7 a. Using Simplex method
 Maximize $Z = 5x_1 + 3x_2$
 Subject to the constraints $x_1 + x_2 \leq 2$
 $5x_1 + 2x_2 \leq 10$
 $3x_1 + 8x_2 \leq 12$
 $x_1, x_2 \geq 0$ (10 Marks)
- b. Solve the following L.P.P. by the Simplex method
 Minimize $Z = x_1 - 3x_2 + 3x_3$
 Subject to the constraints $3x_1 - x_2 + 2x_3 \leq 7$
 $-4x_1 + 3x_2 + 8x_3 \leq 10$
 $2x_1 + 4x_2 \geq -12$
 $x_1, x_2, x_3 \geq 0$ (10 Marks)

OR

- 8 a. Define the following terms a linear programming problem, basic solution, basic feasible solution, optimal solution, artificial variable of an L.P.P. (10 Marks)
- b. Use the two phase method to
 Minimize $Z = 7.5x_1 - 3x_2$
 Subject to the constraints $3x_1 - x_2 - x_3 \geq 3$
 $x_1 - x_2 + x_3 \geq 2$
 $x_1, x_2, x_3 \geq 0$ (10 Marks)

Module-5

- 9 a. Find the initial basic feasible solution by Vogel's method to the following transportation problem. (10 Marks)

		A	B	C	D	Availability
Source	I	21	16	25	13	11
	II	17	18	14	23	13
	III	32	27	18	41	19
	Requirement	6	10	12	15	43

- b. Four jobs are to be done on four machines. The cost (in rupees) of producing i^{th} job on the j^{th} machine is given below:

		Machine			
		M_1	M_2	M_3	M_4
Jobs	J_1	15	11	13	15
	J_2	17	12	12	13
	J_3	14	15	10	14
	J_4	16	13	11	17

Assign the jobs to the different machines so as to minimize the total cost. (10 Marks)

OR

- 10 a. A company has three cement factorize located in cities 1, 2, 3 which supply cement to four projects located in town 1, 2, 3, 4. Each plant can supply 6, 1, 10 truck loads of cement daily respectively and the daily cement requirements of the project and respectively 7, 5, 3, 2, truck loads. The transport cost per truck load of cement (in hundred of rupees) from each plant to each project for the following:

		Project sites			
		1	2	3	4
Factories	1	2	3	11	7
	2	1	0	6	1
	3	5	8	15	9

Determine the optimal distribution for the company so as to minimize the total transportation cost. (10 Marks)

- b. Solve the following transportation problem:

		To					
		9	12	9	6	9	10
From	7	3	7	7	5	5	6
	6	5	9	11	3	11	2
	6	8	11	2	2	10	9
	4	4	6	2	4	2	22

(10 Marks)

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Fourth Semester B.E. Degree Examination, June/July 2023 Machining Science and Jigs & Fixtures

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Define the working principle of lathe. How can you specify a lathe? (06 Marks)
b. Explain with neat sketch, the working of Radial drilling machine. (08 Marks)
c. Explain briefly with sketches at any three drilling operation. (06 Marks)

OR

- 2 a. Draw the engine lathe and cable the parts and discuss the function of lathe parts. (10 Marks)
b. Difference between upmilling and down milling process. (05 Marks)
c. With a neat sketch, explain construction and working of common grinding machine. (05 Marks)

Module-2

- 3 a. Distinguish between orthogonal and oblique cutting with a neat sketch. (06 Marks)
b. List and explain different types of chips formed in metal cutting process. (08 Marks)
c. Sketch and explain single point turning tool geometry. (06 Marks)

OR

- 4 a. List and explain different types of cutting tool materials and state their specific applications. (06 Marks)
b. Draw a merchant's circle diagram, using usual notations and state the assumptions. (08 Marks)
c. List the various types of cutting fluids used in metal cutting briefly. Explain. (06 Marks)

Module-3

- 5 a. What is machinability? Define machinability index. (04 Marks)
b. What are the factors affecting on tool life? (06 Marks)
c. Explain the process of Electroplating. (10 Marks)

OR

- 6 a. Describe the importance of surface finish process. (04 Marks)
b. With a neat sketch, explain the Honing process. (06 Marks)
c. Briefly explain powder coating and Galvanizing process. (10 Marks)

Module-4

- 7 a. Explain with neat sketch the process of Abrasive Jet Machining. (10 Marks)
b. Explain with neat sketch the process of ultrasonic machining process. (10 Marks)

OR

- 8 a. Explain with neat sketch of Electro Discharge machining. (10 Marks)
b. Explain with neat sketch of Laser beam machining. (10 Marks)

Module-5

- 9 a. What are the importances of Jigs and Fixtures in industries? (06 Marks)
b. List the types of Jigs and Fixtures. (06 Marks)
c. What are the materials used to manufacture Jigs and Fixtures? (08 Marks)

OR

- 10 a. What are the factors to be considered to design Jigs and Fixtures? (06 Marks)
b. Briefly explain on Template, Plate, Channel in Jigs. (06 Marks)
c. Briefly explain the importance of fixtures in milling and turning. (08 Marks)

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21ME43

Fourth Semester B.E. Degree Examination, June/July 2023 Fluid Mechanics

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 following terms:
(i) Total pressure (ii) Centre of pressure
(iii) Gauge pressure (iv) Buoyancy (08 Marks)
- b. Derive expression for total pressure force and centre of pressure act on a vertical surface immersed in static fluid. (08 Marks)
- c. Discuss on fluid pressure measuring devices. (04 Marks)

OR

- 2 a. Explain the Eulerian and Lagrangian method of fluid flow analysis with suitable example. (08 Marks)
- b. Derive the 3-dimensional flow continuity equation in cartesian coordinates. (08 Marks)
- c. Calculate the velocity of fluid flow at a point (2, 3) if its 2-D flow stream function is given by $\psi = 2xy$. (04 Marks)

Module-2

- 3 a. Derive the Euler's equation of fluid motion and hence deduce Bernoulli's equation. (10 Marks)
- b. Derive an expression for discharge through venturimeter. (10 Marks)

OR

- 4 a. Derive expression for discharge through a triangular notch. (10 Marks)
- b. A horizontal venturimeter of 20 cm inlet diameter and 10 cm throat diameter is used to measure an oil flow. The discharge of oil through venturimeter is 60 lit/s. Calculate the reading of oil-mercury differential manometer. Take $C_d = 0.98$ and specific gravity = 0.8. (10 Marks)

Module-3

- 5 a. Derive Hagen Poiseuille equation for laminar flow through a circular pipe. (10 Marks)
- b. A crude oil flowing through a horizontal circular pipe of 10 cm diameter and 100 cm length. Assume laminar flow and calculate pressure drop if 100 kg oil collected in a tank in 30 seconds. Take viscosity = 0.97 N-S/m^2 and specific gravity = 0.9. (10 Marks)

OR

- 6 a. Discuss the energy losses that occur in pipe flow. (10 Marks)
- b. Derive Darcy-Weisbach equation for determining loss of head due to friction. (10 Marks)

Module-4

- 7 a. Explain the following terms:
(i) Boundary layer thickness (ii) Streamline body (iii) Bluff body
(iv) Lift (v) Drag (10 Marks)

1 of 2

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, $42+8=50$, will be treated as malpractice.

- b. Deduce an expression for pressure drop (dp) in a pipe flow using Buckingham's π - theorem if fluid has velocity (V), viscosity (μ) and density (ρ). Consider pipe diameter (D) and length (L). (10 Marks)

OR

- 8 a. Explain the following terms:
 (i) Reynold's number (ii) Froude's number (iii) Euler's number
 (iv) Weber's number (v) Mach number (10 Marks)
- b. A flat plate $1.5 \text{ m} \times 1.5 \text{ m}$ moves at 50 km/hr in stationary air of density 1.15 kg/m^3 . The coefficients of drag and lift are 0.15 and 0.75 respectively. Compute:
 (i) Lift force
 (ii) Drag force
 (iii) Resultant force
 (iv) Power required to keep the plate in motion. (10 Marks)

Module-5

- 9 a. Show that velocity of elastic wave propagation in an adiabatic medium is given by $C = \sqrt{\gamma RT}$. (10 Marks)
- b. A projectile travels in air of pressure 100 kPa at 10°C with a speed of 1500 km/hr . Compute the Mach number and Mach angle. Take $\gamma = 1.4$ and $R = 287 \text{ J/kg-K}$. (10 Marks)

OR

- 10 a. Explain the necessity, applications and limitations of CFD. (10 Marks)
- b. A projectile travels with a speed of 1500 km/hr at 20°C temperature and 0.1 MPa air pressure. Calculate the Mach number and Mach angle. Take $\gamma = 1.4$ and $R = 287 \text{ J/kg-K}$. (10 Marks)

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21ME44

Fourth Semester B.E. Degree Examination, June/July 2023 Mechanics and Materials

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Define the following terms :
i) Elasticity ii) Stress iii) Strain iv) Young's modulus v) Poisson's ratio. (05 Marks)
- b. Derive an expression for extension of the uniformly tapered circular bar subjected to an axial load. (05 Marks)
- c. A member ABCD is subjected to point loads P_1 , P_2 , P_3 and P_4 as shown in Fig.Q1(c). Calculate the force P_2 necessary for equilibrium if $P_1 = 45\text{kN}$, $P_3 = 450\text{kN}$ and $P_4 = 130\text{kN}$. Determine stresses in each member and also determine the total elongation of the member assuming the $E = 2.1 \times 10^5 \text{N/mm}^2$.

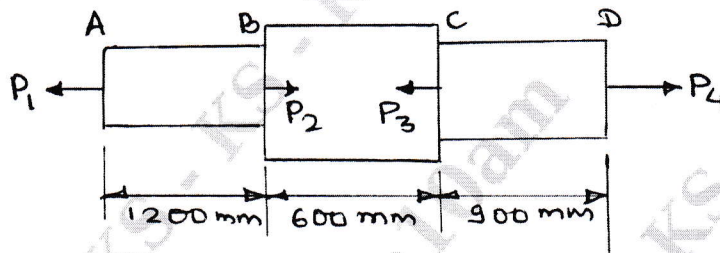


Fig.Q1(c)

(10 Marks)

OR

- 2 a. Derive relationship between modulus of elasticity and modulus of rigidity. (10 Marks)
- b. A compound bar is made up of a central steel plate 50mm wide and 10mm thick to which copper plate 50mm wide and 5mm thick are connected rigidly on each side. The length of the compound bar at room temperature is 1000mm. If the temperature is raised by 100°C , determine the stress in each material and change in length of the compound bar. Assume $E_{st} = 200\text{GPa}$, $E_{CO} = 100\text{GPa}$. (10 Marks)

Module-2

- 3 a. Derive an expression for the normal stress and shear stress on a plane inclined at ' θ ' to the vertical axis in a biaxial stress system. (10 Marks)
- b. An element with the stresses acting on it as shown in Fig.Q3(b). Determine :
i) Principal stresses and its locations
ii) Maximum shear stresses and its locations.

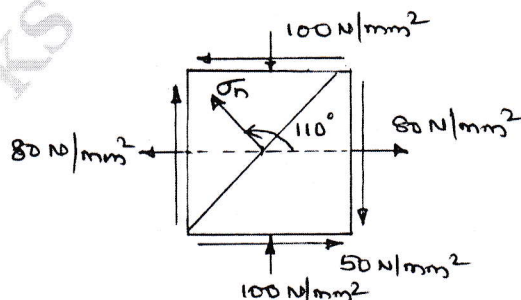


Fig.Q3(b)

1 of 3

(10 Marks)

ant Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

- 4 The state of stress at a point in a strained material is shown in Fig.Q4. Determine :
- Stresses on a plane whose normal is at an angle of 45° with reference to 80N/mm^2 stress direction
 - Magnitude of principal stresses and their location
 - Maximum and minimum shear stress and their location
 - Draw Mohr's circle and verify the results obtained analytically.

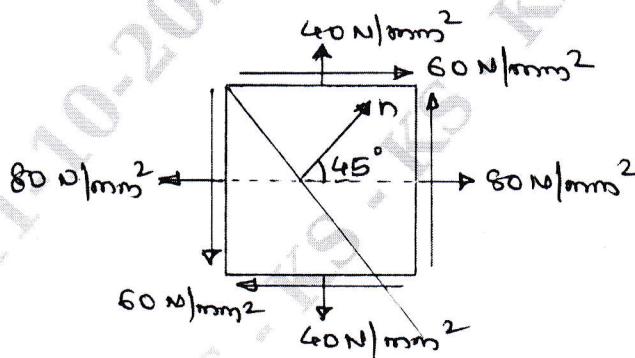


Fig.Q4

(20 Marks)

Module-3

- 5 a. Obtain expressions relating load, shear force and bending moment. (05 Marks)
- b. Draw the shear force and bending moment diagram for the beam shown in Fig.Q5(b).

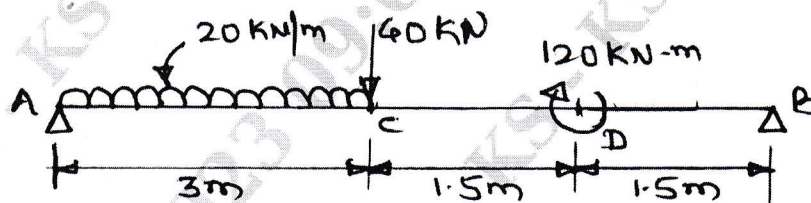


Fig.Q5(b)

(15 Marks)

OR

- 6 a. Derive the equation $\frac{M}{I} = \frac{\sigma_b}{Y} = \frac{E}{R}$ with usual notations. State the assumptions in the derivation. (10 Marks)
- b. A beam having T-section with its flanges of $180\text{mm} \times 10\text{mm}$ and web of $220\text{mm} \times 10\text{mm}$ is subjected to sagging bending moment 15kN-m . Determine the maximum tensile stress and maximum compressive stress, and their location in the section. (10 Marks)

Module-4

- 7 a. Derive differential equation for deflection of beam. (10 Marks)
- b. Determine slope and deflection for a cantilever beam of length L and subjected to UDL $W/\text{unit length}$. (10 Marks)

OR

- 8 a. State assumptions and derive the torsional equation $\frac{T}{J} = \frac{\tau}{R} = \frac{G\theta}{L}$. (10 Marks)
- b. A hollow shaft of diameter ratio 3/8 is required to transmit 588kW at 110rpm, the maximum torque being 120% of the mean. Shear stress is not exceed 63N/mm^2 and twist in a length of 3m not to exceed 1.4° calculate external diameter of shaft which would satisfy these conditions. Take modulus of rigidity as 84GPa. (10 Marks)

Module-5

- 9 a. Derive an expression for circumferential stress and longitudinal stress for a thin cylinder. (10 Marks)
- b. Derive an expression for strain energy for a member subjected to axial load. (05 Marks)
- c. A steel bar 15mm diameter is pulled axially by a force of 10kN. If the bar is 250mm long, calculate the strain energy stored per unit volume of the bar and total strain energy stored by the bar. Take $E = 2 \times 10^5 \text{N/mm}^2$. (05 Marks)

OR

- 10 a. Obtain the expression for Euler's critical load for a long column with both ends hinged. Also state assumptions made. (10 Marks)
- b. A thick cylinder with internal diameter 80mm and external diameter 120mm is subjected to an external pressure of 40N/mm^2 when the internal pressure is 120N/mm^2 . Plot the variation of circumferential stress and radial pressure on the thickness of the cylinder. (10 Marks)

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21BE45

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2023 Biology for Engineers

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 a biomolecule? Explain the classification of biomolecule.	07	L2	CO1
	b.	Explain the role of DNA vaccine for rabies and RNA vaccine for COVID-19.	07	L2	CO1
	c.	Write a short note on cellulose based bio-filters.	06	L2	CO1
OR					
Q.2	a.	Explain the DNA finger printing in forensic applications.	07	L2	CO1
	b.	Explain the role of lipids and its application in cleaning agents.	07	L2	CO1
	c.	Write a short note on biosensors and bioplastics.	06	L2	CO1
Module – 2					
Q.3	a.	Explain brain as a CPU system.	07	L3	CO1
	b.	Explain eye as a camera system.	07	L3	CO1
	c.	Write a short note on cardiac pacemaker.	06	L2	CO1
OR					
Q.4	a.	Explain the robotic arms for prosthetics.	07	L3	CO1
	b.	Explain heart as a pump system.	07	L3	CO1
	c.	Write a short note on engineering solutions for Parkinson's disease.	06	L2	CO1
Module – 3					
Q.5	a.	Explain the lungs as a purification system.	07	L3	CO2
	b.	Explain the kidney as filtration system.	07	L3	CO2
	c.	Write a short note on spirometry and ventilator.	06	L2	CO2
OR					
Q.6	a.	Explain muscular and skeletal system as scaffolds.	07	L3	CO2
	b.	Explain bio-engineering solutions for muscular dystrophy and osteoporosis.	07	L3	CO2
	c.	Write a short note on Chronic Obstructive Pulmonary Disease (COPD).	06	L2	CO2
Module – 4					
Q.7	a.	Explain the terms Echolocation Ultrasonography and Sonars.	07	L3	CO3
	b.	Explain the process of Photosynthesis and Photovoltaic cells.	07	L3	CO3
	c.	Write a short note on Bionic leaf, GPS, Bird flight and aircraft.	06	L2	CO3
OR					
Q.8	a.	Explain the terms Lotus leaf effect, Plant Burrs and Super hydrophobic and self-cleaning surfaces.	07	L3	CO3
	b.	Explain the terms Spark skin and Swimsuits, Bullet train using biological concepts.	07	L3	CO3
	c.	Write a short note on Hemoglobin – Based Oxygen Carriers (HBOC's) and Perfluorocarbons (PFC).	06	L2	CO3
Module – 5					
Q.9	a.	Explain the DNA Organic and Biocomputing.	07	L3	CO4
	b.	Explain the Bioimaging and Artificial intelligence for Disease Diagnosis.	07	L3	CO4
	c.	Write a short note on Self healing Bioconcrete.	06	L2	CO4
OR					
Q.10	a.	Explain the importance of Bioimaging.	07	L3	CO4
	b.	Explain Bioremediation and Bio-Mining via microbial surface adsorption.	07	L3	CO4
	c.	Write a short note on Nanomedicines and Bioleaching.	06	L2	CO4

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Question Paper Version : A

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2023
Universal Human Values

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.**
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. Harmony should be maintained in

a) Between body and life	b) Between self and society
c) Between life and environment	d) All of these
2. Basic human aspirations are

a) Continuous Happiness	b) Prosperity
c) Both a and b	d) None of these
3. Purpose of value education is

a) Foster universal core values	b) Make the syllabus easy
c) Develop values in individuals	d) All of these
4. Knowing means having the

a) Self exploration	b) Self evaluation
c) Right understanding	d) Having knowledge of all
5. Happiness means

a) To be in a state of harmony	b) Fulfillment of desired expectations from others
c) Fulfillment of desired feelings from others	d) Fulfillment of desired sensations from body
6. _____ is called foundation value

a) Respect	b) Affection	c) Love	d) Trust
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7. The Human goal at the level of nature is

a) Prosperity	b) Fearlessness
c) Co-existence	d) Right understanding
8. The outcome of justice is _____

a) Right understanding	b) Prosperity
c) Trust and Fearlessness	d) Coexistence with nature

9. Society means
 a) Family
 c) Few individuals
 ✓ b) All human beings
 d) None of these
10. Feeling for those who have made effort for excellence is _____
 a) Excellence
 ✓ c) Glory
 b) Reverence
 d) None of these
11. An individual people aspiring for the universal human order will be
 ✓ a) More responsible socially and ecologically
 c) More powerful
 b) More rich
 d) More well travel
12. A harmonious world is created by values at 4 levels there are
 a) Home, Family, Society, Universe
 c) School, Home, Office, Temple
 ✓ b) Individual, Family, Society, Universe
 d) None of these
13. "What is the innateness of Tulsi-Plant (or any plant)?
 a) Existence + Growth
 ✓ c) Nurture/Worsen
 b) Cruelty/non-cruelty
 d) Will to live in self
14. As individual people anticipates for the universal human order may be
 a) More rich
 ✓ c) More responsible socially and ecologically
 b) More Powerful
 d) More well-travelled
15. Understanding of human values leads to the practice of
 a) Responsibilities
 c) Profession
 ✓ b) Ethics
 d) Professional ethics
16. "Seeing the self by the self" means
 ✓ a) The consciousness observing the consciousness
 b) The consciousness observing the material
 c) The consciousness observing the co-existence
 d) None of these
17. Education-Right living leads to _____
 ✓ a) Right understanding
 c) Doubts
 b) Confusions
 d) None of these
18. There are _____ dimensions of living
 a) Six (6)
 ✓ b) Four (4)
 c) Nine (9)
 d) Five (5)
19. The second order of nature is _____
 a) Material order
 c) Animal order
 ✓ b) Bio order
 d) Human order
20. The innateness of material order is _____
 ✓ a) Existence
 c) Growth
 b) Cruelty/Non-cruelty
 d) Nurture/Worsen
21. Comprehensive human goal at the level of individual
 a) Prosperity
 ✓ c) Co-existence
 b) Fearlessness
 ✓ d) Right understanding
22. The fourth order of nature is
 a) Material
 b) Bio order
 c) Animal order
 ✓ d) Human order

23. _____ is the basic unit of human society.
 a) Group b) Individual c) Nature d) Society
24. Which of the following is a positive value?
 a) Self respect b) Anger
 c) Fear d) Narrow mindedness
25. What is the nature of self?
 a) Conscious b) Physio-Chemical
 c) Biochemical d) Semi-Conscious
26. Self exploration is seeing beyond
 a) Universe b) House c) Box d) Your senses
27. Human to human interaction is called as
 a) Work b) Behaviour c) System d) None of these
28. "All are our own, all are interconnected, interdependent" means.
 a) Oneness b) Worship c) Ease d) None of these
29. Prosperity means
 a) Feeling of having more than required physical facility
 b) Feeling of having less physical facility
 c) Feeling of having more physical facility
 d) Deprived of physical facility
30. Realization is the activity of
 a) Self b) Body
 c) Both self and Body d) None of these
31. Who is responsible for happiness and unhappiness?
 a) Self b) Body
 c) Outside situation d) Society
32. Value education helps to
 a) Removes our contradictions
 b) Remove our confusions
 c) Bring harmony at all levels of human living
 d) All of these
33. Undivided society is ensured by
 a) Right understanding b) Physical facilities
 c) Relationship with right understanding d) None of these
34. The third order of nature is _____
 a) Material order b) Bio order
 c) Animal order d) Human order
35. Which is the complete value?
 a) Love b) Respect c) Trust d) Care
36. Body is a _____ unit while the self is a _____ unit.
 a) Material, Consciousness b) Consciousness, Material
 c) Material, Material d) Consciousness, Consciousness

37. Society is an extension of _____,
 a) Human Being ~~b) Family~~ c) Nature d) Existence
38. In value education Sanyam means _____
 a) Self-exploration b) Self-evolution
~~c) Self-regulation~~ d) None of these
39. To fulfill human aspirations _____ are necessary
~~a) Both values and skills~~ b) Values
 c) Skills d) None of these
40. The innateness of Bio order is _____
 a) Existence b) Cruelty / Non-cruelty
~~c) Growth~~ ~~d) Nurture / Worsen~~
41. The feelings for those who have made effort for my excellence is _____
 a) Excellence b) Reverence ~~c) Gratitude~~ d) Glory
42. There are _____ comprehensive human goals
 a) Eight (8) b) Six (6) c) Four (4) ~~d) Nine (9)~~
43. The first order of nature is _____
~~a) Material order~~ b) Bio order
 c) Animal order d) Human order
44. Developing ethical competence in the profession is the only effective way to ensure
 a) Responsibilities b) Ethics
 c) Profession ~~d) Professional ethics~~
45. Ensuring justice in relationship, on the basis of values leads to _____ in society.
 a) Fearlessness b) Trust
~~c) Fearlessness and Trust~~ d) None of these
46. Human goal → match correctly
 A Right understanding 1 Individual
 B Prosperity 2 Family
 C Fearlessness (Trust) 3 Society
 D Co-existence 4 Nature/Existence
 a) ~~1 - D, 2 - A, 3 - B, 4 - C~~ b) 1 - B, 2 - C, 3 - D, 4 - A
~~c) 1 - A, 2 - B, 3 - C, D - 4~~ d) 1 - C, 2 - D, 3 - A, 4 - B
47. The human goal at the level of family is
~~a) Prosperity~~ b) Fearlessness
 c) Co-existence d) Right understanding
48. Sah-astitua means _____
~~a) Co-existence~~ b) Co-operation
 c) Co-option d) Corporate identity
49. Acceptance of excellence in others is called
~~a) Reverence~~ b) Guidance
 c) Glory d) Gratitude
50. Each human being is co-existence of
 a) Spirit and Sanyam b) Health and prosperity
~~c) Self and Body~~ d) Mind and Soul
