CBCS SCHEME

USN | | | | | | | | | | |

BME/BSA/BMT/BAG501

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
Industrial Management and Entrepreneurship

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.

			M	L	C
		Module – 1			
Q.1	**a.**	Define Management. Describe its key functions.	**10**	**L1**	**CO1**
	b.	Explain the modern management approaches.	**10**	**L2**	**CO1**
		OR			
Q.2	**a.**	Explain the steps involved in the decision – making process.	**10**	**L2**	**CO1**
	b.	Differentiate between Strategic and Tactical planning.	**10**	**L2**	**CO1**
		Module – 2			
Q.3	**a.**	What is the purpose of Organization? Compare the functional type with line type organizational structure.	**10**	**L3**	**CO2**
	b.	Explain how each stage of staffing process contributes to the overall effectiveness of staffing.	**10**	**L2**	**CO2**
		OR			
Q.4	**a.**	Explain the role of communication in achieving effective coordination.	**10**	**L2**	**CO2**
	b.	Explain the various monitoring techniques used in a sound controlling.	**10**	**L2**	**CO2**
		Module – 3			
Q.5	**a.**	Describe the qualities of an Entrepreneur.	**10**	**L1**	**CO2**
	b.	What are the barriers of Entrepreneurship?	**10**	**L1**	**CO2**
		OR			
Q.6	**a.**	Differentiate between Entrepreneur and Intrapreneur.	**10**	**L2**	**CO2**
	b.	Explain the various stages of Entrepreneurship processes.	**10**	**L2**	**CO2**
		Module – 4			
Q.7	**a.**	What are the characteristics of Small Scale Industries?	**10**	**L1**	**CO3**
	b.	Explain the impact of Liberalization , Privatization and Globalization on Small Scale Industries (SSI's).	**10**	**L2**	**CO3**
		OR			
Q.8	**a.**	Compare General Agreement on Traffs and Trade (GATT) with World Trade Organization (WTO) in International trade.	**10**	**L2**	**CO3**

	b.	What are the steps involved in starting a Small Scale Industries?	10	L1	CO3
		Module – 5			
Q.9	a.	Explain the role of District Industries Centres (DIC's).	10	L2	CO3
	b.	Write about NSIC (National Small Industries Corporation).	10	L2	CO3
		OR			
Q.10	a.	Write about Project Formulation Process.	10	L2	CO3
	b.	Write about selection of project.	10	L2	CO3

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CBCS SCHEME

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BME502

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
Turbo Machines

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.	Define Turbo machine and explain parts of turbomachine with neat sketch.	7	L1	CO1
	b.	What is specific speed of a pump? Derive an expression for the same?	6	L2	CO1
	c.	Tests on a turbine runner 1.25 m in diameter at 30 m head gave the following results : Power developed 736 kW, Speed 180 rpm, Discharge 2.7 m^3/s. Find the diameter, speed and discharge of a runner to operate at 45 m head and gave 1472 kW power at the same efficiency. What is the specific speed of both the turbines?	7	L3	CO1
		OR			
Q.2	a.	With reference to expansion process, define the following and write the corresponding relations: (i) Total-to-Total efficiency. (ii) Static-to-Static efficiency.	4	L1	CO1
	b.	Show that for a compressor polytropic efficiency is given by, $\eta_P = \dfrac{\frac{x-1}{x}\ln\left[\frac{P_2}{P_1}\right]}{\ln\left[\frac{T_2}{T_1}\right]}$ Where P_1 and P_2 are pressure at inlet and outlet of compressor respectively. Where as T_1, T_2 are temperatures at inlet and outlet of compressor respectively.	8	L2	CO1
	c.	A 9 stage centrifugal compressor has overall stage pressure ratio 2.82. Air enters the compressor at 1 bar and 15°C. The efficiency of the compressor is 88%. Determine the following : (i) Pressure ratio of each stage (ii) Polytropic efficiency (iii) Preheat factor	8	L3	CO1
		Module – 2			
Q.3	a.	Derive an alternate form of Euler's turbine equation and explain the significance of each energy components.	8	L2	CO2
	b.	For an axial flow compressor, show that $R = \dfrac{V_f}{2U}\left[\dfrac{\tan\beta_1 + \tan\beta_2}{\tan\beta_1 \times \tan\beta_2}\right]$ Where V_f velocity of flow, U-blade speed β_1, β_2 are blade angles at inlet and outlet respectively.	7	L2	CO2
	c.	The velocity of steam in a Delavar turbine at the inlet is 1200 m/s. The nozzle angle at the inlet is 22° and rotor blades are equiangular. Assume relative velocities of the steam at inlet and outlet to be equal and tangential speed of the rotor is 400 m/s. Determine (i) Blade angles at inlet and outlet. (ii) Power developed if mass flow rate is 1 kg/s.	5	L3	CO2

		OR			
Q.4	**a.**	Show that maximum utilization factor, where ϕ is the speed ratio, α_1 is Guide angle at inlet. $\epsilon_{max} = \frac{2\phi\cos\alpha_1}{1+2R\phi\cos\alpha_1}$.	**8**	**L2**	**CO2**
	b.	Define utilization factor and degree of reaction also show that utilization factor, $\epsilon = \frac{V_1^2 - V_2^2}{V_1^2 - RV_2^2}$?	**7**	**L2**	**CO2**
	c.	The impeller of a centrifugal pump has an outer diameter of 1.5 m. It lifty water at a rate of 2000 kg/s. The blade is making an angle of 145° with the direction of motion at outlet and the speed being 300 rpm. Radial velocity of flow is 3 m/s. Find the power required to drive the impeller.	**5**	**L3**	**CO2**
		Module – 3			
Q.5	**a.**	What is compounding? Name different methods of compounding and explain with neat sketch any one of the method of compounding.	**6**	**L1**	**CO3**
	b.	Prove that in 50% reaction turbine maximum blade efficiency, $\eta_{b\,max} = \frac{2\cos^2\alpha_1}{1+\cos^2\alpha_1}$ Where α_1 is nozzle exit angle.	**7**	**L2**	**CO3**
	c.	A signle stage impulse turbine has diameter of 1.5 m and running at 3000 rpm. The nozzle angle is 20°. Speed ratio is 0.45. Ratio of relative velocity at the outlet to that at inlet is 0.9. The outlet angle of blade is 3° less than inlet angle. Steam flow rate is 6 kg/s. Draw the velocity diagrams and find the following : (i) Blade angle (ii) Power developed (iii) Axial thrust	**7**	**L3**	**CO3**
		OR			
Q.6	**a.**	In a Curtis stage with two rows of moving blades, the rotors are equiangular. The first rotor has an angle of 29° each while second rotor has an angle of 32° each. The velocity of steam at the exit of nozzle is 530 m/s and blade coefficients are 0.9 in the first, 0.95 in the stator and in the second rotor. If the absolute velocity at the stage exit should be axial, find (i) Mean blade speed (ii) The rotor efficiency (iii) Power output for a flow rate of 32 kg/s.	**9**	**L3**	**CO3**
	b.	Define the following terms related to reaction steam turbine and write their relations : (i) Blade efficiency (ii) Stage efficiency	**4**	**L1**	**CO3**
	c.	The following data refers to a stage of reaction turbine: Rotor diameter = 1.5 m, Speed ratio = 0.72, Outlet blade angle 20°, Rotor speed = 3000 rpm, Determine (i) Blade efficiency (ii) Percentage increase in blade efficiency and the rotor speed, if the rotor is designed to run at the best theoretical speed.	**7**	**L3**	**CO3**
		Module – 4			
Q.7	**a.**	With reference to Hydraulic turbines, define (i) Hydraulic efficiency (ii) Mechanical efficiency (iii) Overall efficiency (iv) Volumetric efficiency.	**4**	**L1**	**CO4**

	b.	Show that maximum hydraulic efficiency in a Pelton wheel $\eta_{H\,max} = \frac{1+C_b \cos\beta_2}{2}$. Where C_b – blade velocity coefficient and β_2 is blade angle at exist.	**7**	**L2**	**CO4**
	c.	A Pelton turbine has a water supply of 5 m^3/s at a head of 256 m and runs at 500 rpm. Assume a turbine efficiency of 0.85, a coefficient of velocity for nozzle as 0.985 and a speed ratio of 0.46. Calculate (i) Power output (ii) Specific speed (iii) Number of Jets (iv) Jet diameter (v) Diameter of wheel (vi) Number of cups (vii) Cup dimensions.	**9**	**L3**	**CO4**
		OR			
Q.8	**a.**	Explain the construction and working of Kaplan turbine with neat sketch.	**6**	**L1**	**CO4**
	b.	The following data is given for a Francis turbine. Net head = 70 m, Speed – 600 rpm, Shaft power = 370 kW, $\eta_C = 0.80$, $\eta_H = 0.95$, flow ratio = 0.25, Breadth ratio = 0.1, Outer diameter of the runner is = 2 times inner diameter of runner. The thickness of vanes occupy 10% of circumferential area of the runner. Velocity of flow is constant and discharge is radial at outlet? Determine (i) Guide blade angle. (ii) Runner angle at inlet and outlet. (iii) Diameter of the runner at inlet and outlet. (iv) Width of the wheel at inlet.	**7**	**L3**	**CO4**
	c.	Define draft tube efficiency. Derive an expression for inlet pressure head of draft tube and its efficiency.	**7**	**L2**	**CO4**
		Module – 5			
Q.9	**a.**	Define the following terminologies related to centrifugal pump : (i) Suction head (ii) Delivery head (iii) Static head (iv) Manometric head (v) Manometric efficiency (vi) Mechanical efficiency. (vii) Overall efficiency.	**7**	**L1**	**CO5**
	b.	Derive an expression for H-Q characteristic curve for a centrifugal pump. Discuss the H-Q curve for forward, radial and backward curved vanes.	**8**	**L2**	**CO5**
	c.	A single stage centrifugal pump with a impeller diameter of 30 cm rotates at 2000 rpm and lifts 3 m^3/s water to a height of 30 m with a manometric efficiency of 75%. Find the number of stages and diameter of each impeller of a multistage pump to lift 5 m^3/s of water to a height of 200 m when rotating at 1500 rpm.	**5**	**L3**	**CO5**
		OR			
Q.10	**a.**	With neat sketch, explain slip, slip coefficient and slip factor.	**6**	**L1**	**CO5**
	b.	Explain the phenomenon of surging and stalling.	**4**	**L1**	**CO5**

	c.	A single sided centrifugal air compressor running at a speed of 16500 rpm produced a pressure ratio of 4 : 1. The hub diameter at the eye of the compressor is 16 cm. Inlet of air to the rotor is axial and equal to 120 m/s. The stagnation temperature and pressure at inlet are 25 °C and 1 bar. The mass flow rate is 8.3 kg/s and the total head isentropic efficiency is 78%. The pressure coefficient is 0.7. Determine (i) Eye tip diameter (ii) Blade angle at eye root and eye tip. (iii) Impeller tip diameter. (iv) Shaft power input to the compressor if the mechanical efficiency is 97%.	**10**	**L3**	**CO5**

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CBCS SCHEME

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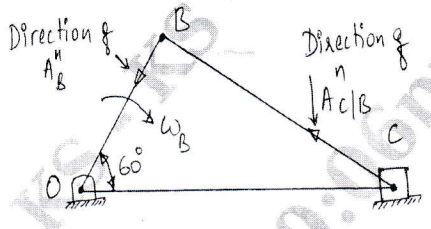
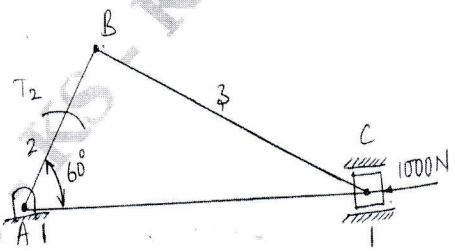
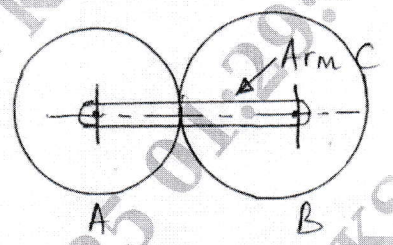
BME503

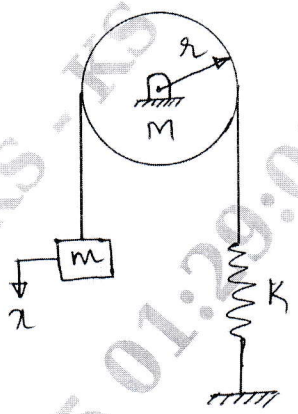
Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
Theory of Machines

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.	Define : (i) Kinematic link (ii) Kinematic pair (iii) Kinematic chain (iv) Mechanism (v) Machine.	10	L1	CO1
	b.	Briefly explain the following inversions : (i) Beam engine (ii) Watt's straight line mechanism	10	L1	CO1
		OR			
Q.2	a.	In a slider crank mechanism, the crank OB = 30 mm and connecting rod BC = 120 mm. The crank rotates at a uniform speed of 300 rpm clockwise. For the crank position as shown in Fig. Q2 (a) ; find (i) Velocity of Piston C and angular velocity of connecting rod BC (ii) Acceleeration of piston C and angular acceleration of connecting rod BC.  Fig. Q2 (a)	10	L3	CO1
	b.	If the crank and connecting rod are 150 mm and 600 mm long respectively and the crank rotates at a uniform speed of 100 rpm closckwise; determine the angular velocity and angular acceleration of connecting rod and velocity of the piston by using Raven's approach. The angle which the crank makes with the inner dead center is 30°.	10	L3	CO1
		Module – 2			
Q.3	a.	With a neat sketch, explain the following : (i) Equillibrium of Three force members (ii) Equillibrium of Four force members.	10	L1	CO2
	b.	For a slider crank mechanism as shown in Fig. Q3 (b), the force applied to the piston is 1000 N when the crank is at 60° from IDC. Given AB = 100 mm and BC = 300 mm. Calculate the driving torque T_2.  Fig. Q3 (b)	10	L3	CO2

		OR			
Q.4	**a.**	Explain : (i) Dynamic force analysis. (ii) D'Alembert's principle.	**10**	**L1**	**CO2**
	b.	A punching machine punches 38 mm holes in 32 mm thick plate requires 7 N-m/mm^2 of sheared area and punches one hole in every 10 sec. The mean speed is of the flywheel given is 25 m/sec. The punch has a stroke of 100 mm. Find : (i) Power required to drive the machine. (ii) Mass of the flywheel, if total fluctuation of speed is not to exceed 3%.	**10**	**L3**	**CO2**
		Module – 3			
Q.5	**a.**	Define the following gear terminologies : (i) Pitch circle. (ii) Pitch circle diameter. (iii) Addendum (iv) Dedendum (v) Module.	**10**	**L1**	**CO3**
	b.	A pinion having 30 teeth drives a gear having 80 teeth. The profile of the gears is involute with 20° pressure angle, 12 mm module and 10 mm addendum. Find the length of path of contact and length of arc of contact.	**10**	**L3**	**CO3**
		OR			
Q.6	**a.**	Derive with usual notations ; an expression for velocity ratio of compound gear trains.	**10**	**L2**	**CO3**
	b.	In an Epicyclic gear train, an arm carries two gears A and B having 36 and 45 teeth respectively. If the arm rotates at 150 rpm in anticlockwise direction about centre of gear A which is fixed as shown in Fig. Q6 (b); then determine speed of gear B. If the gear A instead of being fixed makes 300 rpm in clockwise direction, what will be the speed of gear B? Use Tabular method.  Fig. Q6 (b)	**10**	**L3**	**CO3**
		Module – 4			
Q.7	**a.**	A shaft carries 4 masses A, B, C, D in parallel planes in this order along its length. The masses at B and C are 18 kg and 12.5 kg respectively. Each of B and C has an eccentricity of 60 mm. The masses at A and D have an eccentricity of 80 mm. The angle between B and C is 100° and in between B and A is 190°, both being measured in same direction. The axial distance between A and B is 100 mm and in between B and C is 200 mm. For the shaft to be in complete balance, determine magnitude of masses at A and D as well as the angular position of mass at D.	**10**	**L3**	**CO4**
	b.	A four cylinder vertical engine has cranks 150 mm long. The planes of rotation of the 1st, 2nd and 4th cranks are 400 mm, 200 mm and 200 mm respectively from 3rd crank and their reciprocating masses are 50 kg, 60 kg and 50 kg respectively. Find the mass of the reciprocating parts of 3rd cylinder and relative angular positions of the cranks in order that the engine may be in complete primary balance.	**10**	**L3**	**CO4**

		OR			
Q.8	**a.**	Define the following terminologies : (i) Sensitiveness (ii) Stability (iii) Hunting (iv) Effort (v) Power.	**10**	**L1**	**CO4**
	b.	A Porter governor has equal arms each of 250 mm long and pivoted on the axis of rotation. Each flyball has a mass of 5 kg and the mass of central sleeve is 15 kg. The radius of rotation of the flyball is 150 mm when the governor begins to lift and 200 mm when the governor is at maximum speed. Find the minimum, maximum speeds and the range of speed of the governor.	**10**	**L3**	**CO4**
		Module – 5			
Q.9	**a.**	Define the following types of vibrations : (i) Free vibration. (ii) Forced vibration (iii) Damped vibration. (iv) Undamped vibration (v) Longitudinal vibration.	**10**	**L1**	**CO5**
	b.	Determine the natural frequency of the spring mass pulley system as shown in Fig. Q9 (b).  Fig. Q9 (b)	**10**	**L3**	**CO5**
		OR			
Q.10		Explain the following : **a.** Rotating unbalance. **b.** Reciprocating unbalance. **c.** Vibration isolation **d.** Critical speed.	**20**	**L2**	**CO5**

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CBCS SCHEME

BESK508

USN | | | | | | | | | | |

Question Paper Version : D

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
Environmental Studies

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.

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1. Average long – term weather of an area is called
   a) Weather conditions b) Seasonal variations
   c) Average weather d) Climate

2. Climate and global air circulations are mainly affected by the properties of
   a) Water and Air b) Temperature c) Precipitation d) None of these

3. The p^H of acid rain is
   a) less than 5.2 b) 5.2 – 6.2 c) 6.2 – 7.2 d) Above 7.2

4. Acid rain has been increasing day by day due to
   a) Urbanisation b) Industrialisation
   c) Increase in vehicle population d) None of these

5. Which is responsible for Ozone depletion?
   a) Methyl bromide b) CFC's
   c) Hydro chlorofluorocarbons d) All of these

6. The International protocol to protect the Ozone layer's
   a) Kytoto protocol b) Basal protocol c) Montreal protocol d) Viema protocol

7. The Ozone layer is locate upto _____ km above the earth surface.
   a) 1000 b) 50 c) 80 d) 100

8. Acid rain effects on
   a) Materials b) Plants c) Soil d) All of these

9. High – Concentration of fluoride content in drinking water causes.
   a) Dental flurosis b) Bone brittling c) Dental caries d) Plague

10. Desired concentration of fluoride content in drinking water in mg/ℓ is
a) 0.7 – 1.2 b) 0.5 – 2 c) 2 – 5 d) 1 – 1.75

11. Which of the following is a Producer?
a) Animals b) Human beings c) Plants d) Fish

12. An ecosystem consists of
a) Biotic species b) Biotic species and physical factors
c) Only insects d) Only materials

13. The term Ecology was coined by
a) E.P. Odiyum b) A. G. Tansley c) Albert Einstein d) A.G. Haeckal

14. Which year did the concept of sustainability first appear?
a) 1992 b) 1978 c) 1980 d) 1987

15. According to United Nations, the following are the significant issues of social progress.
a) Instruction b) Public Health c) Living standards d) All of these

16. The number of SDGS are
a) 10 b) 15 c) 17 d) 16

17. Which one of the following is not comes under SDG's?
a) Zero Hunger b) Political activity c) Education d) Gender quality

18. Which of the following has the largest population in food chain?
a) Producers b) 1st degree consumers
c) 2nd degree consumers d) Decomposers

19. U.N era of scheduling for sustainable growth is from
a) 2002 - 11 b) 2003 - 12 c) 2004 - 13 d) 2005 - 14

20. Which of the following is an example of Artificial Ecosystem?
a) Forest b) River c) Aquarium d) Lake

21. The First United National conference as Human Environment was held at Stickholm in
a) December 1972 b) June 1972 c) June 1974 d) June 1992

22. To achieve the goal of clean environment, important strategies required are
a) Effective laws b) Active participation of the publics
c) Active participation of NGO's d) Both (a) and (b)

23. There are provisions for protection for our environment under
a) Indian Penal Code b) Police Act c) Municipal Act d) All of these

24. The Government of India enacted the Water Act in the year.
a) 1970 b) 1974 c) 1975 d) 1980

25. The Environmental Act of India was enacted in the year.
a) 1986 b) 1992 c) 1984 d) 1974

26. The Environmental Act, 1986 deals with
a) Air b) Water c) Land d) All of these

27. Karnataka State "Pollution Control Board" was established in the year.
a) 1974 b) 1982 c) 1986 d) 1976

28. Which of the following is not a waste treatment method for biomedical waste?
a) Incineration b) Chemical disinfecting
c) Auto claving d) Sieving

29. The Organic material of the solid waste will decompose.
a) By the flow of water b) By the soil particles
c) By the action of micro organisms d) B Oxidation

30. Which of the following element make e – waste hazardous in nature?
a) Lead b) Glass c) Plastic d) Iron

31. Temporary hardness of water is due to
a) Chloride hardness b) Manganese hardness
c) Calcium hardness d) Carbonate hardness

32. The green house gas is
a) N_2O b) CH_4 c) CO_2 d) All of these

33. Which is not a natural source of pollution?
a) Volcanoes b) Forest - Fire c) Coal - fire d) Dust storms

34. Air pollution from automobiles can be controlled by providing
a) Wet collector b) Scrubbers c) Catalytic converter d) All of these

35. Normal sound level of quiet speech is
a) 120 dB b) 90 dB c) 140 dB d) 50 dB

36. What is the permissible range of p^H for drinking water as per the Indian standard?
a) 6 to 9 b) 6.5 to 7.5 c) 6 to 8.5 d) 6.5 to 8.5

37. Which of the following is a major cause of soil pollution?
a) Accidents involving the vehicles that are transporting waste material.
b) Pesticides and chemical fertilizers from agricultural lands
c) Improper solid waste disposal d) All of these

38. What does E – Waste stand for?
a) Environment Waste b) Electronic Waste
c) Equipment Waste d) All of these

39. What is municipal solid waste disposal?
a) The placement on the load b) The lack of waste
c) In sanitary land fill site d) All of these

40. What is major cause of air pollution?
a) Fossil fuel burning b) Industry emission
c) Wild fire d) All of these

41. Solar Energy is an example of
a) Renewable b) Continuous c) Non - renewable d) None of these

42. Hydrogen energy can be tapped through
a) Heat pumps b) Fuel cells c) Petroleum d) Gassifiers

43. OTEC is an energy technology that converts
a) Energy in large tides of ocean to generate electricity
b) Energy in ocean waves to generate electricity
c) Energy in ocean due to thermal gradient to generate electricity
d) Energy in the fast moving ocean currents to generate electricity.

44. Which of the following source of energy is less eco – friendly?
a) Biogas b) Wind c) Solar d) Nuclear

45. O_3 Represents
a) Oxygen b) Planets c) Ozone d) Green house gases

46. Which of the following is an example of Water Borne Diseases
a) Hepatitis - A b) Hepatitis - B c) Hepatitis - C d) Hepatitis - H

47. Identify the renewable soured of energy from the following :
a) Coal b) Wind power c) Uranium d) Oil

48. Which of the following is biotic?
a) Forest b) Iron c) Water d) None

49. World Environment Day celebrated on
a) 6th June b) 5th July c) 5th June d) 5th Jan

50. Which of the following is conventional source of Energy?
a) Wind Energy b) Solar Energy c) Bio gas d) None of these

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CBCS SCHEME

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BME515C

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
Supply Chain Management and Introduction to SAP

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.	Explain the fundamentals and evaluation of SCM.	10	L2	CO1
	b.	Discuss the decision phases involved in SCM.	10	L2	CO1
		OR			
Q.2	a.	What are the enablers and drives of supply chain performance? Explain with example.	10	L1	CO1
	b.	Describe the strategic sourcing and make vs buy decision.	10	L2	CO1
		Module – 2			
Q.3	a.	Explain the concept of warehouse management and the role of stores system and procedures.	10	L2	CO2
	b.	Discuss the importance of material handling and cost effectiveness in supply chain management.	10	L2	CO2
		OR			
Q.4	a.	Describe the factors influencing distribution networks design in supply chain management.	10	L2	CO2
	b.	Explain the models for facility location and capacity allocation.	10	L2	CO2
		Module – 3			
Q.5	a.	What is supply chain network optimization? Discuss its importance.	10	L1	CO3
	b.	Explain the impact of uncertainty on network design using decision trees.	10	L2	CO3
		OR			
Q.6	a.	Discuss the multiple item and multiple location inventory management techniques.	10	L2	CO3
	b.	Explain the concepts of pricing and reverse management in supply chain management.	10	L2	CO3
		Module – 4			
Q.7	a.	Describe the process of supply chain integration and the importance of building partnership.	10	L2	CO4
	b.	Explain the Bullwhip effect and its impact on supply chain performance.	10	L2	CO4
		OR			
Q.8	a.	Discuss the role of IT in supply chain management and its factor trends.	10	L2	CO4
	b.	Explain the concept of reverse supply chain and agile supply chain.	10	L2	CO4
		Module – 5			
Q.9	a.	Describe the SAP material management system and its key components.	10	L2	CO5
	b.	Explain the procurement process in SAP with the steps involved.	10	L2	CO5
		OR			
Q.10	a.	What is the significance of master data management in SAP? Discuss its role in procurement.	10	L2	CO5
	b.	Explain the importance of transaction codes in SAP material management.	10	L2	CO5

CBCS SCHEME

USN | 1 | K | S | 2 | 2 | E | C | 0 | 4 | 1 |

BRMK557

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025
Research Methodology and IPR

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.	Identify the meaning of Research and brief out the objective and motivation in engineering research.	10	L1	CO1
	b.	Explain brief about research cycle and verify with the research flow diagram.	10	L1	CO1
		OR			
Q.2	a.	Identify the types of engineering research and briefly explain them.	10	L1	CO1
	b.	Explain about the different types of research misconduct.	10	L1	CO1
		Module – 2			
Q.3	a.	Explain about the importance of literature review and technical reading.	10	L2	CO2
	b.	Mention the various benefits of bibliographic databases.	10	L1	CO2
		OR			
Q.4	a.	Indentify the impact of technical reaction and brief about it.	10	L1	CO2
	b.	Enumerate the impact of title and keywords on citation with example.	10	L2	CO2
		Module – 3			
Q.5	a.	Define Intellectual properties and explain about its types.	10	L1	CO3
	b.	Explain about the key aspect of patent law.	10	L2	CO3
		OR			
Q.6	a.	Explain about the assessment of novelty.	10	L1	CO3
	b.	Brief about the patent procedure in India.	10	L1	CO4
		Module – 4			
Q.7	a.	Mention and brief about the justification for copyright law.	10	L2	CO4
	b.	Explain about the basic concepts of under lying copyright law.	10	L1	CO4
		OR			
Q.8	a.	Brief about the various representations of sound recordings.	10	L2	CO5
	b.	Explain about TRIPS agreement in detail.	10	L1	CO5

Module – 5					
Q.9	**a.**	Explain about the justification of protection designs.	**10**	**L2**	**CO5**
	b.	Brief about the excluded subjected matter in the context of design protection.	**10**	**L1**	**CO5**
OR					
Q.10	**a.**	What are the rights of the owner of designs? Explain.	**10**	**L1**	**CO5**
	b.	Brief about the Assignment of Design Rights.	**10**	**L1**	**CO5**

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