Department of Biotechnology

1.3.1 Institution integrates cross-cutting issues relevant to Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum

PROGRAM EDUCATIONAL OBJECTIVES (PEO)

The program educational objectives of Bachelor of Engineering in Biotechnology at Sapthagiri College of Engineering are broadly defined on following four counts.

PEO 1: Students will be in lucrative professionals in different sectors of Biotechnology fields with high proficiency in multidisciplinary tasks.

PEO 2: Operate technically at competent level in concocting problems of biotechnology and utilize the knowledge to develop Biological processes and Bio-techniques.

PEO 3: Students will endure higher education with harmonious combination of the skills of engineering, management & life science

PEO 4: Students will inculcate Socio-ethical values, exhibit professionalism, team spirit for lifelong learning and well-being of society and mankind.

PROGRAM SPECIFIC OUTCOMES (PSO)

At the end of the B.E Biotechnology engineering program, the students are expected to have developed the following program specific outcomes.

PSO 1: The graduates will have the ability to plan, analyze, design, execute and contribute to the field of biotechnology and allied industries designing ,developing and providing solutions for product/processes/technology development.

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

PSO 2: The graduates of Biotechnology engineering program will have the ability to take up employment, entrepreneurship, research and development for sustainable society.

PSO 3: The graduates will be able to pursue opportunities for personal and professional growth, higher studies, demonstrate leadership skills and engage in lifelong learning by active participation in the Biotechnology profession.

PSO 4: The graduates will be able to demonstrate professional integrity and an appreciation of ethical, environmental, regulatory and issues related to Biotechnology.

PROGRAM OUTCOMES(POs)

Program outcomes are narrower statements that describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge and behavior. Graduation of **Bachelor of Biotechnology** program at Sapthagiri College of Engineering will attain the following program outcomes **in the field of Biotechnology.**

PO 1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO 2. Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO 3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO 4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO 5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

PO 6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO 7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO 9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO 10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO 11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO 12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

SAPTHAGIRI College of Engineering
Creating Tomorrow

Sapthagiri College of Engineering

(Affiliated to Visvesvaraya Technological University, Belagavi & Approved by AICTE, New Delhi)
#14/5, Chikkasandra, Hesaraghatta Main Road, Bengaluru – 560057
Phone: 080-28372800/1/2 www.sapthagiri.edu.in Fax: 080-28372797

AY 2020-21

Courses that integrates with Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum.

Sl.No.	Subject Name /Code	Beyond Syllabus	Innovative teaching methods / ICT Tools Used	Deployment Strategy and Tool	Cross-cutting issues integrated	PO	PSO
1.	18BT32/ Microbiology	Seminar	Google Classroom and Google meet	Chalk and Talk method PPT,Project work, Internship	**Environmental Sustainability**	PO1,2,3,4,6,7,9,10,11,12	PSO1,2,3,4
2.	18BT33 /Unit Operations	---	Google Classroom and Google meet	Chalk and Talk method PPT	**Environmental Sustainability**	PO1,2,3,7,9,10,11	PSO 1,2,3,4
3.	18BT35/ Cell Biology and Genetics	---	Google Classroom and Google meet	Chalk and Talk method,PPT	**Human values**	PO1,2,3,4,8,9,11	PSO1,2,3,4
4.	18BTL37/Microbiology Laboratory	Conduction of new experiments which are beyond the syllabus	Google Classroom and Google meet	Chalk and Talk method PPT,Project and internship	**Environmental Sustainability**	PO1,2,3,4,6,7,9,10,11,12	PSO1,2,3,4
5.	18BTL38 /Unit Operations Laboratory	---	Google Classroom and Google meet	Chalk and Talk method PPT	**Environmental Sustainability**	PO1,2,3,7,9,10,11	PSO 1,2,3,4
6.	18BT43 /Immunotechnology	---	Google Classroom and Google meet	Chalk and Talk method PPT, NPTEL videos	**Human values**	PO1,2,3,6,8	PSO1,2,3,4
7.	18BT44/ Cell Culture Techniques	---	Google Classroom and Google meet	Chalk and Talk method PPT	**Environmental Sustainability**	PO 1,2,7,10,12	PSO1,2,3,4
8.	18BTL48/ Immunotechnology Laboratory	---	Google Classroom and Google meet	Chalk and Talk method PPT	**Human values**	PO1,2,3,6,8	PSO1,2,3,4
9.	18BT51/ Bio-Business and Entrepreneurship	---	Google Classroom and Google meet	Chalk & talk, PPT, webinars,	**Professional ethics**	PO1,2,3,6,8	PSO1,2,3,4
10.	18BT52 /Chemical Reaction Engineering	---	Google Classroom and Google meet	Chalk and Talk method	**Environmental Sustainability**	PO 1,2,3,5,6,7	PSO1,2,4

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

				PPT			
11.	18BT54/ Genomics & Proteomics	---	Google Classroom and Google meet	Chalk and Talk method You tube PPT	**Human Value and Professional ethics**	PO1,2,3,4,8,9,11	PSO1,2,4
12.	18BT56 /Genetic Engineering &Applications	---	Google Classroom and Google meet	Chalk and Talk method, NPTEL Videos, PPT	**Ethical issue-Human values**	PO1,2,3,6,8	PSO1,2,3,4
13.	18BTL58/ Genetic Engineering and Cell Culture Laboratory	Conduction of new experiments which are beyond the syllabus	Google Classroom and Google meet	Chalk and Talk method, NPTEL Videos, PPT	**Ethical issue-Human values**	PO3,6,8	PSO1,2,3,4
14.	18BT61 /Process Control & Automation Chemical	---	Google Classroom and Google meet	Chalk and Talk method PPT	**Environmental Sustainability**	PO1,2,3,4,5,6,7,9,10,11,12	PSO1,2,3,4
15.	18BT62 /Bioprocess Equipment Design & CAED	---	Google Classroom and Google meet	Chalk and Talk method PPT	**Environmental Sustainability**	PO1,2,3,4,5,7,9,10,12	PSO1,2,3,4
16.	18BTL66 /Process Control & Automation Laboratory	---	Google Classroom and Google meet	Chalk and Talk method PPT	**Environmental Sustainability**	PO1,2,3,4,5,7,11	PSO1,2,4
17.	18BTMP68 /Mini-project	---	Google Classroom and Google meet	PPT	**Environmental Sustainability** **Human Value and Professional ethics**	PO1,2,3,4,5,6,7,8,9,10	PSO1,2,3,4
18.	17BT72 Genomics and proteomics	---	Google Classroom and Google meet	Chalk and Talk method, NPTEL Videos, PPT	**Human Value and Professional ethics**	PO1,3,6,8	PSO1,2,3,4
19.	17BT754 Forensic science	Group Discussion and case studies	Google Classroom and Google meet	Chalk and Talk method PPT	**Human Value and Professional ethics**	PO1,2,4,6,8,10	PSO1,2,4
20.	17BTL76 Fermentation technology Lab	---	Google Classroom and Google meet	Chalk and Talk method PPT	**Environmental Sustainability**	PO1,2,3,4,7,11	PSO1,2,3,4

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

21.	17BTL78 Project phase 1 + Seminar	---------	Google Classroom and Google meet	PPT	**"Environmental Sustainability** **Human Value and Professional ethics"**	PO1,2,3,4,5,6,7,8,9,10	PSO1,2,3,4
22.	17BT82 Regulatory affairs in Biotechnology	---------	Google Classroom and Google meet	Chalk and Talk method PPT	**Human Value and Professional ethics**	PO1,2,3,4,6,8,11,12	PSO1,2,4
23.	17BT833 Environmental biotechnology	---------	Google Classroom and Google meet	Chalk and Talk method PPT	**Environmental Sustainability**	PO1,2,3,4,7,9,11	PSO1,2,4
24.	17BT84 Internship/professional Practices	---------	Google Classroom and Google meet	PPT	**Human Value and Professional ethics**	PO1,2,3,4,5,6,8,9,10	PSO1,2,3,4
25.	17BT85 Project work Phase	---------	Google Classroom and Google meet	PPT	**"Environmental Sustainability** **Human Value and Professional ethics"**	PO1,2,3,4,5,6,7,8,9,10	PSO1,2,3,4
26.	17BTL86 Seminar	---------	Google Classroom and Google meet	PPT	**"Environmental Sustainability** **Human Value and Professional ethics"**	PO1,2,3,4,5,6,7,8,9,10	PSO1,2,3,4

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

HOD, BT

Head of the Department
Dept. of Bio -Technology
Sapthagiri College of Engineering
No. 14/1, Chikkasandra
Hesaraghatta Main Road
Bangalore

SAPTHAGIRI COLLEGE OF ENGINEERING

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi)

(Affiliated to Visvesvaraya Technological University, Belagavi& Approved by AICTE, New Delhi)

ISO 9001, 14001 Certified Institute, Accredited by NAAC with A Grade

DEPARTMENT OF ECE

Curriculum Plan & Deployment 2020-21

Sl.No.	Subject Name /Code	Beyond Syllabus	Innovative teaching methods / ICT Tools	Deployment Strategy and Tool	Cross-cutting issues integrated	PO, PSO
1	Technological Innovation Management and Entrepreneurship / 18EC51		(i) Youtube video on successful entrepreneurs, Business Plan, How to start a business Simulation (ii) Google ClassRoom (iii) Google Meet	(i) PPT in Google Meet (ii)Youtube video on social responsibilities of Business towards society (iii)Youtube video on successful entrepreneurs, Business Plan, How to start a business	· Business Ethics · Human	PO7, PO8, PO9, PO10, PO11
2	Environmental Studies / 18CIV59	-	-	(i) PPT in google meet (ii) Google Classroom	Environment Sustainability	PO:1,7,8,9, 10,
3	Satellite Communication / 17EC755		(i) Google ClassRoom (ii) Google Meet	online google meet,Youtube	Environment Sustainability	PO1,PO2,PO3,PO4,PO10,PO11, PO12,PSO1,PSO2

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

HOD
Head of the Department
Electronics & Communication
Sapthagiri College of Engineering
Bangalore-560 057.

Sapthagiri College of Engineering

#14/5, Chikkasandra, Hesaraghatta Main Road, Bangalore-57

(Affiliated to VTU, Belgavi & Approved by AICTE-New Delhi)

(ISO 9001:2015 & ISO 14001:2015 certified Institution Accredited by NACC with "A" Grade)

Department of Information Science & Engineering

1.3.1 Institution integrates cross-cutting issues relevant to Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum

PROGRAM EDUCATIONAL OBJECTIVES (PEO)

The program educational objectives of Bachelor of Engineering in Information science and Engineering at Sapthagiri College of Engineering are broadly defined on following four counts.

PEO 1: Graduates will be able to successfully gain theoretical and practical knowledge to identify and solve challenges in Information Science and Engineering.

PEO 2: Graduates will begin their career in IT industry, academia, management and research to engage in lifelong learning.

PEO 3: Graduates will exhibit inclination towards the needs of the society through ethics and service.

PROGRAM SPECIFIC OUTCOMES (PSO)

At the end of the B.E Information Science and Engineering program, the students are expected to have developed the following program specific outcomes.

PSO 1: Apply a sound fundamental knowledge in mathematics and physical sciences to Information Science and Engineering.

PSO 2: Analyze, design and evaluate computer components and information systems using technology with suitable platform.

PSO 3: Apply modern technology to implement in the components and its system.

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

Sapthagiri College of Engineering

#14/5, Chikkasandra, Hesaraghatta Main Road, Bangalore-57
(Affiliated to VTU, Belgavi & Approved by AICTE-New Delhi)
(ISO 9001:2015 & ISO 14001:2015 certified Institution Accredited by NACC with "A" Grade)

Department of Information Science & Engineering

.PROGRAM OUTCOMES (POs)

Program outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge and behavior. Graduation of **Bachelor of Information Science and Engineering** program at Sapthagiri College of Engineering will attain the following program outcomes **in the field of Information Technology**

PO 1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO 2. Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO 3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO 4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO 5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO 6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO 7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

PO 8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO 9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO 10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO 11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO 12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

Sapthagiri College of Engineering

#14/5, Chikkasandra, Hesaraghatta Main Road, Bangalore-57
(Affiliated to VTU, Belgavi & Approved by AICTE-New Delhi)
(ISO 9001:2015 & ISO 14001:2015 certified Institution Accredited by NACC with "A" Grade)

Department of Information Science & Engineering

Courses that integrates with Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum.

Sl. No.	Subject Name/ Code	Beyond Syllabus	Innovative teaching methods / ICT Tools Used	Deployment Strategy and Tool	Cross-cutting issues integrated	PO, PSO
1	Software Engineering/ 18CS35	State modelling, Interaction modelling	Case studies, Activity diagram, sequence diagram, flow diagram	PPT, Google meet,GCR	Environmental Sustainability	POs: 1,2,3,4,5,8,9,10,12 PSOs:1,2,3
2	Management and Entrepreneurship / 18CS51	Project Design and Network Analysis, Modern Small Business Enterprises	PPT, Youtube videos	PPT, Zoom, Google class room	Human Values and Professional Ethics Environmental Sustainability	POs:6,7,8,9,10,11,12 PSOs:1,2,3
3.	Internet of things / 17CS81	Conduction of Case Studies in Simulation Tool Simul8	Demonstartion of Important concepts using Arena,Simul8	.PPT .Google meet .Google class room	Environmental Sustainability	POs:1,2,3,6,11,12 PSOs:1,2,3

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bangaluru - 560 057

4	Big data and Analytics / 17CS82	Hadoop Programs	Demonstration using simulator	PPT, Zoom, Google class room	Environmental Sustainability	POs: 1,2 PSOs: 1
5	Internship / 17IS84	Internship for the students to work on real time projects, need based projects.	PPT's	PPT's , Videos	Professional Ethics Environmental Sustainability	POs : 1, 2, 3 ,4, 5, 6, 7, 8, 9, 10, 11, 12 PSOs: 1,2,3
6	Project Work-I/II / 17ISP78/85	Projcts for the students to work on real time projects, need based projects.	simulators	PPT's , Videos	Professional Ethics, Environmental Sustainability	POs : 1, 2, 3 ,4, 5, 6, 7, 8, 9, 10, 11, 12 PSOs: 1,2,3

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

HOD
Dr H.R Ranganatha
Prof. & H.O.D
Dept.of Information Science & Engg.
Sapthagiri College of Engineering
14/5 Chikkasandra, Hesaraghatta Main Road
BENGALURU-560 057

CONSTITUTION OF INDIA, PROFESSIONAL ETHICS AND CYBER LAW (CPC)

Course Code	: 18CPC39/49	CIE Marks : 40
Lecture Hours/Week (L:T:P)	: (1:0:0)	SEE Marks : 60
Credits : 01		Exam Hours : 02

Course Learning Objectives: To

- know the fundamental political codes, structure, procedures, powers, and duties of Indian government institutions, fundamental rights, directive principles, and the duties of citizens
- Understand engineering ethics and their responsibilities; identify their individual roles and ethical responsibilities towards society.
- Know about the cybercrimes and cyber laws for cyber safety measures.

Module-1

Introduction to Indian Constitution:

The Necessity of the Constitution, The Societies before and after the Constitution adoption. Introduction to the Indian constitution, The Making of the Constitution, The Role of the Constituent Assembly - Preamble and Salient features of the Constitution of India. Fundamental Rights and its Restriction and limitations in different Complex Situations. Directive Principles of State Policy (DPSP) and its present relevance in our society with examples. Fundamental Duties and its Scope and significance in Nation building.

Module-2

Union Executive and State Executive:

Parliamentary System, Federal System, Centre-State Relations. Union Executive – President, Prime Minister, Union Cabinet, Parliament - LS and RS, Parliamentary Committees, Important Parliamentary Terminologies. Supreme Court of India, Judicial Reviews and Judicial Activism. State Executives – Governor, Chief Minister, State Cabinet, State Legislature, High Court and Subordinate Courts, Special Provisions (Articles 370, 371,371J) for some States.

Module-3

Elections, Amendments and Emergency Provisions:

Elections, Electoral Process, and Election Commission of India, Election Laws. Amendments - Methods in Constitutional Amendments (How and Why) and Important Constitutional Amendments. Amendments – 7, 9, 10, 12, 42, 44,

61, 73, 74, 75, 86 and 91, 94, 95, 100, 101, 118 and some important Case Studies. Emergency Provisions, types of Emergencies and its consequences.

Constitutional special provisions:

Special Provisions for SC and ST, OBC, Women, Children and Backward Classes.

Module-4

Professional / Engineering Ethics:

Scope & Aims of Engineering & Professional Ethics - Business Ethics, Corporate Ethics, Personal Ethics. Engineering and Professionalism, Positive and Negative Faces of Engineering Ethics, Code of Ethics as defined in the website of Institution of Engineers (India): Profession, Professionalism, and Professional Responsibility. Clash of Ethics, Conflicts of Interest. Responsibilities in Engineering Responsibilities in Engineering and Engineering Standards, the impediments to Responsibility. Trust and Reliability in Engineering, IPRs (Intellectual Property Rights), Risks, Safety and liability in Engineering

Module-5

Internet Laws, Cyber Crimes and Cyber Laws:

Internet and Need for Cyber Laws, Modes of Regulation of Internet, Types of cyber terror capability, Net neutrality, Types of Cyber Crimes, India and cyber law, Cyber Crimes and the information Technology Act 2000, Internet Censorship. Cybercrimes and enforcement agencies.

Course Outcomes: On completion of this course, students will be able to,

1. Describe and analyze the role and salient features of the Indian Constitution
2. Understand the structure and powers of the Union and State Executives.
3. Relate to the procedures and provisions in the electoral process.
4. Develop Engineering and Professional ethics and adopt the responsibilities expected of an Engineer.
5. Identify the cybercrimes and describe the cyber laws for cyber safety measures.

Question paper pattern for SEE and CIE:

- The SEE question paper will be set for 100 marks and the marks scored by the students will proportionately be reduced to 60. The pattern of the question paper will be objective type (MCQ).
- For the award of 40 CIE marks, refer the University regulations 2018.

Textbook/s

1. Constitution of India, Professional Ethics and Human Rights, Shubham Singles, Charles E. Haries, and et al, Cengage Learning India, 2018

2. Cyber Security and Cyber Laws, Alfred Basta and et. al., Cengage Learning India, 2018

Reference Books

1. Introduction to the Constitution of India, Durga Das Basu, Prentice – Hall, 2008.
2. Engineering Ethics, M. Govindarajan, S. Natarajan, V. S. Senthilkumar, Prentice – Hall, 2004

ENVIRONMENTAL STUDIES

Course Code	: 18CIV59	CIE Marks	: 40
Lecture Hours / Week (L:T:P)	: (1:0:0)	SEE Marks	: 60
Credits	: 01	Exam Hours	: 02

Module - 1

Ecosystems (Structure and Function): Forest, Desert, Wetlands, Riverine, Oceanic and Lake.

Biodiversity: Types, Value; Hot-spots; Threats and Conservation of biodiversity, Forest Wealth, and Deforestation.

Module - 2

Advances in Energy Systems (Merits, Demerits, Global Status and Applications)**:** Hydrogen, Solar, OTEC, Tidal and Wind.

Natural Resource Management (Concept and case-studies): Disaster Management, Sustainable Mining, Cloud Seeding, and Carbon Trading.

Module - 3

Environmental Pollution (Sources, Impacts, Corrective and Preventive measures, Relevant Environmental Acts, Case-studies)**:** Surface and Ground Water Pollution; Noise pollution; Soil Pollution and Air Pollution.

Waste Management & Public Health Aspects: Bio-medical Wastes; Solid waste; Hazardous wastes; E-wastes; Industrial and Municipal Sludge.

Module - 4

Global Environmental Concerns(Concept, policies and case-studies):Ground water depletion/recharging, Climate Change; Acid Rain; Ozone Depletion; Radon and Fluoride problem in drinking water; Resettlement and rehabilitation of people, Environmental Toxicology.

Module - 5

Latest Developments in Environmental Pollution Mitigation Tools (Concept and Applications): G.I.S. & Remote Sensing, Environment Impact Assessment, Environmental Management Systems, ISO14001; Environmental Stewardship- NGOs.

Field work: Visit to an Environmental Engineering Laboratory or Green Building or Water Treatment Plant or Waste water treatment Plant; ought to be Followed by understanding of process and its brief documentation.

Course outcomes: At the end of the course, students will be able to:

1. Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale.
2. Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment.
3. Demonstrate ecology knowledge of a complex relationship between biotic and a biotic components.
4. Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.
5. Relate to the latest Developments in Environmental Pollution Mitigation Tools.

Question paper pattern:

- The Question paper will have 100 objective questions.
- Each question will be for 01 marks
- Student will have to answer all the questions in an OMR Sheet.
- The Duration of Exam will be 2 hours.

Textbook/s

1. Environmental Studies, Benny Joseph, Tata McGraw – Hill., 2nd Edition, 2012
2. Environmental Studies, S M Prakash, Pristine Publishing House, Mangalore, 3rd Edition 2018
3. Environmental Studies – From Crisis to Cure, R Rajagopalan, Oxford Publisher, 2005

Reference Books

1. Principles of Environmental Science and Engineering, Raman Sivakumar, Cengage learning, Singapur. 2nd Edition, 2005
2. Environmental Science – working with the Earth, G.Tyler Miller Jr., Thomson Brooks /Cole, 11th Edition, 2006
3. Text Book of Environmental and Ecology, Pratiba Sing, Anoop Singh & Piyush Malaviya, Acme Learning Pvt. Ltd. New Delhi, 1st Edition

SAPTHAGIRI COLLEGE OF ENGINEERING

(Affiliated to Visvesvaraya Technological University, Belgaum, Approved by AICTE , New Delhi)
14/5, Chikkasandra, Hesaraghatta Main Road Bengaluru – 560 057

DEPARTMENT OF CIVIL ENGINEERING

COURSE ALLOTMENT

As per your choice and subsequent use of discretion of undersigned, you will be pleased to know that the following Theory and Laboratory Course are allotted to you for the forth coming ODD semester.

Sl no.	COURSE NAME	COURSE CODE
1.	CONSTRUCTION MANAGEMENT AND ENTREPRENEURSHIP	18CV51
2.	ELEMENTS OF CIVIL ENGINEERING AND MECHANICS (CS-A)	18CIV14
3.	SURVEYING PRACTICE	18CVL57
4.	ENVIRONMENTAL STUDIES(CS)	18CIV59

The following documents are attached with this letter for the effective course planning and delivery. You are advised to start preparing for the course and submit all the required documents for verification to the under signed before the commencement of semester.

1. Syllabus copy of the course
2. Time Table copy
3. Academic calendar of events.
4. Lesson plan format of the course.
5. Attendance Registers
6. Name list of Registered Students.

Wishing you a very Happy and effective course period.

To
Dr/ Prof/ Mr/ Mrs: **Kavya H P**

DATE:

HOD
Dept. of Civil Engg.
Sapthagiri College of Engg.
Bangalore-560 057

B.E IN CIVIL ENGINEERING(CV-2018-19)
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)
SEMESTER – V

ENVIRONMENTAL STUDIES

Course Code	18CIV59	CIE Marks	40
Teaching Hours / Week (L:T:P)	(1:0:0)	SEE Marks	60
Credits	01	Exam Hours	02

Module - 1

Ecosystems (Structure and Function): Forest, Desert, Wetlands, Riverine, Oceanic and Lake.
Biodiversity: Types, Value; Hot-spots; Threats and Conservation of biodiversity, Forest Wealth, and Deforestation.

Module - 2

Advances in Energy Systems (Merits, Demerits, Global Status and Applications): Hydrogen, Solar, OTEC, Tidal and Wind.
Natural Resource Management (Concept and case-studies): Disaster Management, Sustainable Mining, Cloud Seeding, and Carbon Trading.

Module - 3

Environmental Pollution (Sources, Impacts, Corrective and Preventive measures, Relevant Environmental Acts, Case-studies): Surface and Ground Water Pollution; Noise pollution; Soil Pollution and Air Pollution.
Waste Management & Public Health Aspects: Bio-medical Wastes; Solid waste; Hazardous wastes; E-wastes; Industrial and Municipal Sludge.

Module - 4

Global Environmental Concerns (Concept, policies and case-studies): Ground water depletion/recharging, Climate Change; Acid Rain; Ozone Depletion; Radon and Fluoride problem in drinking water; Resettlement and rehabilitation of people, Environmental Toxicology.

Module - 5

Latest Developments in Environmental Pollution Mitigation Tools (Concept and Applications): G.I.S. & Remote Sensing, Environment Impact Assessment, Environmental Management Systems, ISO14001; Environmental Stewardship- NGOs.
Field work: Visit to an Environmental Engineering Laboratory or Green Building or Water Treatment Plant or Waste water treatment Plant; ought to be Followed by understanding of process and its brief documentation.

Course outcomes: At the end of the course, students will be able to:

- CO1: Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale,
- CO2: Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment.
- CO3: Demonstrate ecology knowledge of a complex relationship between biotic and a biotic components.
- CO4: Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues.

Question paper pattern:

- The Question paper will have 100 objective questions.
- Each question will be for 01 marks
- Student will have to answer all the questions in an OMR Sheet.
- The Duration of Exam will be 2 hours.

Sl. No.	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
Textbook/s				
1	Environmental Studies	Benny Joseph	Tata Mc Graw – Hill.	2nd Edition, 2012

10CIV18/28

USN | | | | | | | | | | | Question Paper Version : A

First/Second Semester B.E Degree Examination, June/July 2011
Environmental Studies
(COMMON TO ALL BRANCHES)

Time: 2 hrs.] [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. The sequence of eating and being eaten in an ecosystem is called
   a) carbon cycle b) food chain c) sulphur cycle d) hydrological cycle
2. The adverse effect of modern agriculture is
   a) water pollution b) soil pollution c) water logging d) All the above.
3. An animal that feeds upon another animal is
   a) consumer b) producer c) predator d) decomposer
4. Which part of plant contains nitrogen fixing bacteria?
   a) Roots b) Stems c) Leaves d) Flowers
5. Green revolution is
   a) Crop variety improvement b) Judicious use of fertilizers
   c) Expansion of irrigation d) All the above.
6. The important goal of a EIA is to
   a) increase pollution level b) resource conservation
   c) stop developmental activities d) deforestation
7. Organic farming is
   a) farming without using pesticides and chemical fertilizers
   b) enhancing biodiversity
   c) Promoting soil biological activity
   d) All the above.

8. Percentage of nitrogen in earth's atmosphere is
   a) 98% b) 78% c) 21% d) 12%
9. Eutrophication results from
   a) industrial effluents b) vehicular exhausts
   c) accumulation of plant materials in water bodies d) purified water
10. 'Earth Day' is held every year on
    a) June 5th b) April 22nd c) November 23rd d) January 26th
11. Population stabilization is essential for
    a) sustainable development b) economic growth
    c) agriculture improvement d) industrial development
12. Cholera, Typhoid, Meningitis and Hepatitis are the diseases caused due to
    a) electromagnetic radiation b) radioactive rays
    c) dirty water d) x-rays
13. Presence of high levels of nitrates in water causes
    a) dehydration b) obesity c) Blue-baby-syndrome d) Pneumonia
14. Which of the following is a natural source of environmental pollution?
    a) Sewage b) Industries c) Automobiles d) Earthquake
15. The depletion of trees is causing accumulation of
    a) NO_2 b) SO_2 c) CO_2 d) O_2
16. _____ is the best environmental clean alternative fuel.
    a) Diesel b) CNG c) Coal d) Petrol
17. Direct conversion of solar energy is attained by
    a) Solar photovoltaic system b) Galvanic cells
    c) Electrolytic cells d) Hydrogen fuel cells
18. Nuclear power plant in Karnataka is located at
    a) Bhadravathi b) Sandur c) Kaiga d) Raichur
19. Nuclear fusion reaction occurs in the
    a) sun b) stars c) hydrogen bomb d) All of these.
20. Demography is the study of
    a) Animal behaviour b) Population growth c) Rivers d) All of these.
21. Smog is a
    a) natural phenomenon b) colourless gas
    c) combination of smoke and fog d) none of these.
22. Air pollution from automobiles can be controlled by fitting
    a) electrostatic precipitator b) wet scrubber
    c) catalytic converter d) all the above.
23. 'Minamata' disease is caused by
    a) Lead b) Mercury c) Cadmium d) Arsenic

24. The major objective of the family welfare programs in India is
a) disease control b) population growth rate control
c) employment generation d) None of these

25. The protocol that reduces green house gas emissions is
a) Kyoto protocol b) Cartagena protocol c) Montreal protocol d) Vienna protocol

26. Green house effect causes
a) lowering in temperature of earth b) rise in temperature of earth
c) lowering of acid rain d) increase in rainfall.

27. Excess of fluoride in drinking water is likely to cause
a) Hepatitis b) Stomach upset c) Cholera d) Fluorosis

28. Primary cause of acid rain around the world is due to
a) carbon dioxide b) suphur dioxide c) carbon monoxide d) Ozone

29. Major compounds responsible for the destruction of Ozone layer is
a) oxygen b) CFCs c) CO_2 d) CH_4

30. Which of the following is the remedial measure for acid rain?
a) Reducing the release of oxides of nitrogen and sulphur into the atmosphere
b) Use of coal, free from sulphur
c) Use of electrostatic precipitator and catalytic converters
d) All of these

31. The radiations absorbed by ozone layer are
a) Infra-red b) Ultra-violet c) Gamma rays d) Visible

32. Bhopal gas tragedy occurred due to the leakage of
a) Methyl Isocyanate b) Sulphur dioxide c) Mustard gas d) Methane gas

33. Environmental protection is the responsibility of
a) Government of India b) NGO's
c) Individuals d) All

34. Which of the following is NGO?
a) Bengaluru Mahanagara Palike b) Narmada Bachao Andolan
c) Karnataka Power Corporation Limited d) None of these

35. The objectives of the Wild Life (protection) Act 1972 is
a) To preserve the biodiversity
b) To maintain essential ecological and life supporting systems
c) Protection and conservation of wild life
d) All the above

36. Which of the following is the authority to monitor state industrial effluents?
a) Centre for science and development b) State pollution control board
c) Indian environmental association d) None of these

37. Environmental education is targeted to
a) General public b) Professional social groups
c) Technicians and scientists d) All of these

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru-560 057

38. Trickle irrigation reduces
a) Percolation
b) Salinization
c) Water evaporation
d) All of these

39. Hydro electricity is generated from
a) Lakes and ponds
b) Coal plants
c) Water reservoir of river dams
d) Forests

40. The pollution caused by transportation depends on
a) Type of vehicle's engine
b) Age of vehicle
c) Traffic congestion
d) All of these

41. Which of the following resource is inexhaustible?
a) Solar
b) Fossil fuel
c) Mineral
d) Coal

42. Cow dung can be used
a) As manure
b) For production of biogas
c) Both (a) and (b)
d) None of these

43. Recycled water can be used for
a) Crop irrigation
b) Landscape gardening
c) Replenishing fast depleting aquifers
d) All of these

44. Noise pollution limit in industrial area is
a) 95 dB
b) 80 dB
c) 65 dB
d) 100 dB

45. Solar radiations consist of
a) Infra-red region
b) Visible region
c) Both (a) and (b)
d) None of these

46. Liquefied petroleum gas is a mixture of
a) Methane and ethane
b) Propane and butane
c) Methane and butane
d) Methane and propane

47. Global warming affects
a) Food production
b) Melting of glaciers
c) Climate change
d) All of these

48. The science of animal husbandry is called
a) Animal science
b) Human science
c) Soil science
d) Plant science

49. Chernobyl nuclear disaster occurred in the year
a) 1987
b) 1986
c) 1982
d) 1980

50. Environment Protection Act of 1986 is meant for
a) Waste management
b) Desert management
c) Forest management
d) Protection of human environment including human, plants, animals and property

* * * * *

SAPTHAGIRI College of Engineering Creating Tomorrow

SAPTHAGIRI COLLEGE OF ENGINEERING

SEMESTER PERSONAL TIME TABLE with effect from 01-08-2019

Department of Civil Engineering

FACULTY NAME: Kavya H P

Subject: Construction Management And Entrepreneurship
Subject Code: 18CV51

Subject: Elements of Civil Engineering and Mechanics
Subject Code: 18CIV14 (CS-A)

Subject: Surveying Practice
Subject Code: 18CVL57

Subject: Environmental studies
Subject Code: 18CIV59

Period	1	2	Tea Break	3	4	Lunch	5	6	7
Time	8:30 am – 9:30 am	9:30 am – 10:30 am	10:30 am – 10:50 am	10:50 am – 11:50 am	11:50 am – 12:50 pm	12:50 pm – 1:45 pm	1:45 pm – 2:40 pm	2:40 pm – 3:35 pm	3:35 pm – 4:30 pm
DAY									
MON		18CIV14	SHORT BREAK			LUNCH BREAK	18CVL57(B1)		
TUE	18CV51	18CIV14					18CVL57(B2)		
WED	18CIV14						~~18CIV14~~	18CVL57(B3)	
THU					18CIV14		18CV51		
FRI				18CV51					18CIV59 (CS)
SAT	18CIV14				18CV51				

NOTE: Environmental Studies(18CIV59 Interdisciplinary subject to All Branches of Engineering for 5th sem.

Signature of TTC

HOD

38. "Earth day" is observed on
a) 1st December b) 5th June c) April 22nd d) 1st January

39. The committee which submitted its report to government of India on environmental education is
a) Tiwari Committee b) Mehta Committee
c) Banerjee Committee d) Agarwal Committee

40. BOD means
a) Biochemical oxygen demand b) Chemical oxygen demand
c) Biophysical oxygen demand d) All of these

41. The pH value of the acid rain water is
a) 5.7 b) 7.0 c) 8.5 d) 7.5

42. Ozone layer thickness is measured in
a) PPM b) PPB c) Decibels d) Dobson units

43. Eutrophication is
a) An improved quality of water in lakes
b) A process in carbor cycle
c) The result to accumulation of plant nutrients in water bodies
d) A water purification technique.

44. Wind energy generation depends on
a) direction of wind b) velocity of wind
c) humidity d) precipitation

45. Nitrate concentration above 45 mg/lt causes
a) Vomiting b) Dysentery
c) Typhoid d) Blue Baby disease

46. Ozone hole is said to occur when the ozone level decreases below
a) 200 Du b) 2000 Du c) 20 Du d) 2 Du

47. Acid rain can be controlled by
a) reducing SO_2 and NO_2 emissions b) reducing CO and hydrocarbons emissions
c) Increasing number of lakes d) None of these

48. Animal husbandry may result in
a) Global warming b) Acid rain
c) Ozone depletion d) None of these

49. Freons are
a) HFC b) CFC c) NFC d) Hydrocarbons

50. Ozone hole was first discovered over
a) Arctic b) Antartica c) Tropical region d) Africa.

* * * * *

2. Which place in India the tidal energy has been experimented?
a) Goa b) Karnataka c) Kerala d) Tamil Nadu

3. Hydrogen energy can be tapped through
a) heat pumps b) fuel cells c) photovoltaic cells d) gasifiers

4. Molasses from sugar industry is used to generate
a) biodiesel b) hydrogen c) bioethanol d) biomethanol

5. Bhopal gas tragedy caused due to the leakage of
a) Methyl ISO Cyanate (MIC) b) Methane
c) Sulphur dioxide d) Carbon monoxide

6. Noise pollution limits at residential area
a) 80 dB b) 45 dB c) 60 dB d) 90dB

7. Ozone layer is present in
a) Troposphere b) Stratosphere c) Mesosphere d) Thermosphere

8. Odour in water can be removed by
a) Aeration b) Changing pH c) Sedimentation d) None of these

9. Which of the following is an air pollutant:
a) Oxygen b) Particulate matter c) Nitrogen d) Carbon dioxide

10. The protocol that reduces green house gas emission is
a) Kyoto protocol b) Montreal protocol c) Vienna protocol d) Basal protocol

11. The process of movement of nutrients from the soil by acid rain is called
a) Transpiration b) Thermosphere c) Infiltration d) Leaching

12. Which of the following is not a method for water conservation:
a) rain water harvesting b) reducing water usage
c) ground water extraction d) water recycling

13. Smog is
a) natural phenomenon b) combination of smoke and fog
c) colourless d) all of these

14. The wild life protection act in India was passed in
a) 1978 b) 1972 c) 1986 d) 1992

15. Air (prevention and control of pollution) Act in India was passed in
a) 1970 b) 1975 c) 1981 d) 1999

16. The Tiger conservation project was started in the year
(a) 1973 (b) 1984 (c) 1999 (d) 2004.

17. The leader of "Chipko movement" is
(a) Sunderlal Bahuguna (c) vandana shiva
(b) medha patkar (d) suresh Heblikar

LESSON PLAN

Subject : CONSTRUCTION MANAGEMENT & E Subject Code : 18CV51 Class : V SEM

Period	Date	Topics Planned	Date	Topics Covered	Rer
1	01/09/20	Discussion on Syllabus	01/09/20	Discussion on Syllabus	
2	03/09/20	Module-1 : Introduction and characteristics of Management.	03/09/20	Module-1: Introduction and characteristics of management	
3	04/09/20	Significance, objectives and levels of management	04/09/20	Significance, objectives and levels of management	
4	05/09/20	Introduction to planning	05/09/20	classes suspended Teacher's day Celebration	
5	08/9/20	Planning Intro, Characteristics & Types of planning	08/09/20	planning Introduction Characteristics & types of planning	
6	10/09/20	Types of plans, Construction life cycle	10/09/20	Types of plans, construction life cycle	
7	11/09/20	Project organisation types of organisation	11/09/20	project organisation, Types of organisation	
8	12/09/20	Construction planning and scheduling	12/09/20	Construction planning and scheduling	
9	15/09/20	Scheduling and problem on Bar Chart	15/09/20	Scheduling and problem on Bar Chart.	

LESSON PLAN

Period	Date	Topics Planned	Date	Topics Covered	Remarks
10	18/09/20	Resource Management Module-2 - Introduction	18/09/20	Resource Management Module-2 Introduction	
11	19/09/20	Labour Productivity	19/09/20	Labour Productivity	
12	22/09/20	Construction Equipments	22/09/20	Construction Equipments	
13	24/09/20	Types of Construction Equipments	24/09/20	Types of Construction Equipments	
14	25/09	Estimation of Productivity	25/09	Estimation of productivity	
15	26/09	Problems on	26/09	Problems on	

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

LESSON PLAN

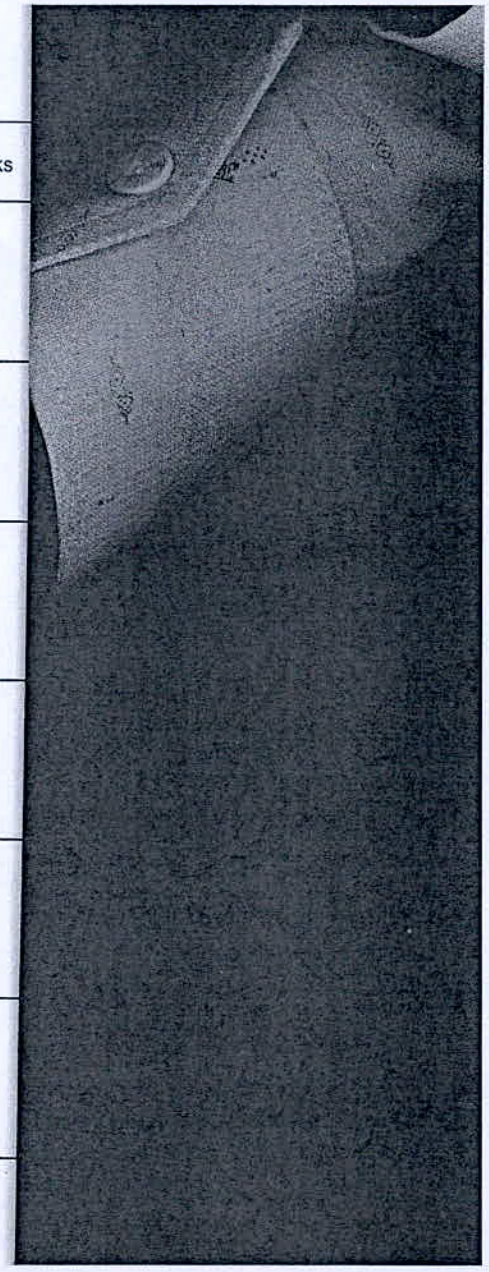
Period	Date	Topics Planned	Date	Topics Covered	Remark
19	8/10	Estimation of ownership	8/10	Estimation of ownership	
20	9/10	Sinking fund & Investment cost	9/10	Sinking fund & Investment cost	
21	10/10	Network analysis (Module-1)	13/10	Network analysis (Module-1)	
22	13/10	Network analysis (Module-1)	15/10	Network analysis Module-1	
23	15/10	CPM Method (Module-1)	16/10	CPM Method (Module-1)	
24	16/10	CPM Method - Problems	17/10	CPM Method - Problems	
25	17/10	CPM Method	20/10	CPM Method	
26	20/10	PERT Method	22/10	PERT Method	
27	22/10	AOA & AON Network	23/10	AOA & AON Network	

LESSON PLAN

Period	Date	Topics Planned	Date	Topics Covered	Remarks
28	23/10	Module-3 Introduction, construction process	23/10	Module-3, Introduction process.	
29	23/10	Cost of quality, ISO Standard	23/10	Cost of quality, ISO Standards	
30	24/10	TQM and Health & Safety	24/10	TQM & Health and Safety	
31	29/10	Safety legislation, Safety Insurance	29/10	Safety legislation, Safety Insurance	
32	30/10	Ethics, Morals and Values	30/10	Ethics, Morals and values	
33	31/10	Module-4 Introduction	31/10	Module-4 Introduction	
34	03/11	Micro and Macro Economics	03/11	Micro and Macro Economics	
35	04/11	Interest & Time value of Money	04/11	Interest and Time value of Money	
36	07/11	Compound Interest - Single & present worth	07/11	Compound Interest - Single & present worth	

LESSON PLAN

Period	Date	Topics Planned	Date	Topics Covered	Remarks
37	10/11	Equal payment & sinking fund	10/11	Equal payment & sinking fund	
38	17/11	Equal payment & uniform gradient	17/11	Equal payment & uniform gradient	
39	19/11	Comparision of alternative - PWM	19/11	Comparision of alternative - PWM	
40	20/11	Present worth Method	20/11	Present worth Method	
41	24/11	Capitalized Method	24/11	Capitalized Method	
42	26/11	Rate of Return Method	26/11	Rate of Return Method	
43	27/11	Breakeven	27/11	Breakeven analysis	



Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road

LESSON PLAN

Period	Date	Topics Planned	Date	Topics Covered	Remarks
46	03/12	Functions of Entrepreneurship	03/12	Functions of Entrepreneurship	
47	04/12	Process of Entrepreneurship	04/12	Process of Entrepreneurship	
48	05/12	Micro Enterprises	05/12	Micro Enterprises	
49	08/12	Small and Medium Enterprises	08/12	Small and medium Enterprises	
50	10/12	Buisness planning process	10/12	Buisness planning process	
51	11/12	Importance of planning	11/12	Importance of planning.	
52	15/12	Venture capital, Exports	15/12	Venture capital. Exports	
53	17/12	previous question paper discussion	17/12	previous question paper discussion	
54	18/12	Question paper discussion	18/12	previous question paper discussion	

LESSON PLAN

Period	Date	Topics Planned	Date	Topics Covered	
55					
56					
57					

Reference Text Books / Materials

1. P. C. Tripathi & P. N. Reddy, "Principles of management", Tata
2. Chitkara K., "Construction Project Management", Tata-
3. Poornima M., Entrepreneurship Development", Pearling
4. "Construction Management & Entrepreneurship", H. S. V
5. .....

Signature of Faculty

HOD

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

ATTENDANCE

18C V51

Class : 5th Sec.: Subject with Code : CONSTRUCTION MANAGEMEN

Sl. No.	USN	NAME	DATE	01/09/2020	3/09	4/09	8/09	10/09	11/
				1	2	3	4	5	6
1	1SG17CV027	LINGRAJ		A	A	A	1	2	
2	1SG18CV001	ABHISHEK G.A		A	1	2	3	4	5
3	1SG18CV002	ABHISHEK M.V		1	2	3	4	5	
4	1SG18CV003	ABHISHEK MOHAN		A	A	A	A	1	2
5	1SG18CV004	ABHISHEK R		1	2	3	4	5	6
6	1SG18CV005	ADHYA N.K		A	A	A	A	1	2
7	1SG18CV006	AKSHATH GOWDA N.K		A	A	A	1	2	3
8	1SG18CV007	ANANYA.S		1	2	3	4	5	6
9	1SG18CV008	ANKITH K.C		1	2	3	4	5	6
10	1SG18CV009	BHARATH P		1	2	3	A	4	5
11	1SG18CV010	BRINDA P		1	2	3	4	5	6
12	1SG18CV011	CHANDANA M		1	2	3	4	5	6
13	1SG18CV012	DANISH AKOUAM							
14	1SG18CV013	DARSHAN.N		1	2	3	A	4	5
15	1SG18CV014	DHRUVA KUMAR. D.L		A	A	A	1	2	3
16	1SG18CV015	DILIP K.S		1	2	3	4	5	6
17	1SG18CV016	DIVYA K		1	2	3	4	5	6
18	1SG18CV017	GANAVI N		1	2	3	4	5	6
19	1SG18CV018	GANGADEVI S		1	2	3	4	5	6
20	1SG18CV019	GEETHA.N		1	2	3	4	5	6
21	1SG18CV021	GURUCHARANA REDDY P.S		1	2	A	A	A	3
22	1SG18CV022	HANUMANTHARAJA.S.C		A	A	A	A	1	2
23	1SG18CV023	HARSHITHA R		1	A	2	3	4	5
24	1SG18CV024	ISHAQUE AHMED K.M		1	2	3	4	5	6
25	1SG18CV025	KAVYA SHREE S		1	2	3	4	5	6
	No. of Abs.			07	07	07	06	01	03
	Initials			Kavya	Kavya	Kavya	Kavya	Kavya	Kavya

15/09	18/09	19/09	22/09	24/09	25/09	26/09
8	9	10	11	12	13	14
4	5	6	A	7	8	9
7	8	9		10	11	12
6	7	8	9	10	11	12
4	5	6	7	8	9	10
7	8	9	10	11	12	A
4	A	A	5	6	7	8
5	6	7	8	9	A	A
8	9	10	11	12	13	14
8	9	10	A	11	12	13
7	8	9	10	11	12	13
8	9	10	11	12	13	14
8	9	10	11	12	13	14
7	8	9	10	11	12	13
4	5	6	7	8	9	10
8	9	10	11	12	13	A
8	9	10	A	11	12	13
8	9	A	10	11	A	14
8	9	10	11	12	13	14
8	9	10	11	12	13	14
5	6	7	8	9	10	11
4	5	A	A	6	7	8
7	8	9	A	10	11	A
8	9	10	11	12	13	14
8	9	10	11	12	13	14
00	01	03	05	00	02	04
Faculty	Faculty	Faculty	Faculty	Faculty	Faculty	Faculty

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

1/09	30/09	01/10	8/10	9/10	10/10	13/10	15/10
15	16	17	18	19	20	21	22
7	10	11	12	13	14	A	15
7	A	13	14	15	16	17	18
13	14	15	16	17	18	19	20
11	A	12	13	14	15	16	17
13	14	15	16	17	18	A	19
9	10	11	12	13	14	15	16
A	10	11	12	13	14	15	16
15	16	17	18	19	20	21	22
14	15	16	17	18	19	20	21
14	15	16	A	17	18	19	20
5	16	17	18	19	20	21	22
A	15	16	17	18	19	20	21
4	15	16	17	18	A	19	20
1	12	13	14	15	16	17	18
4	15	16	17	18	19	20	21
7	14	15	16	17	18	19	20
15	A	16	17	18	19	20	21
15	16	17	18	19	20	21	22

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

16/10/20	17/10	20/10	22/10	23/10	24/10	29/10
23	24	25	26	27	28	29
16	17	18	19	20	21	22
19	20	21	22	A	23	24
21	22	23	24	25	26	27
18	19	20	21	22	23	24
20	21	22	A	23	24	25
17	A	A	18	19	20	21
17	18	A	19	20	21	22
23	24	25	26	27	28	29
22	23	24	25	26	27	28
21	22	23	24	25	26	27
23	24	25	26	27	28	29
22	23	24	25	26	27	28
21	22	23	24	25	26	27
19	20	21	22	23	24	25
22	23	24	25	26	27	28
21	22	23	24	25	26	27
22	23	24	25	26	27	28
23	24	25	26	27	28	29
23	24	25	26	27	28	29
19	20	21	22	23	24	25
17	18	19	20	21	22	23
18	19	20	21	22	23	24
22	23	24	25	26	27	28
23	24	25	26	27	28	29
0	01	02	01	01	0	0
Tamyes	Leave	Leave	Leave	Leave	Leave	Leave

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

/10	31/10	3/11	4/11	7/11	10/11	17/11	19/11	20/11/2
30	31	32	33	34	35	36	37	
	23	24	25	26	27	28	29	30
5	26	27	28	29	A	30	31	32
	29	30	31	32	33	A	34	35
	26	27	A	28	29	30	31	32
	27	28	29	30	31	32	33	34
	23	24	25	26	27	28	29	30
	24	25	26	27	28	29	30	A
	31	32	33	34	35	36	37	38
	30	31	32	33	34	35	36	37
	29	30	31	32	33	34	35	36
	31	32	33	34	35	26	37	38
	30	31	32	33	34	35	36	37
	29	30	31	32	33	34	35	36
	27	28	29	30	31	32	33	34
	30	31	32	33	34	35	36	3
	29	30	31	32	33	34	35	36
	A	30	31	32	33	34	35	36
	31	32	33	34	35	36	37	38
	31	32	33	34	35	36	37	38
	27	29	29	30	31	32	33	34
	25	26	27	28	29	30	31	3
	26	27	28	29	30	31	32	3
	30	31	32	33	34	35	36	3
	31	32	33	34	35	36	37	3
	01	0	01	0	01	01	0	0
	Lave	Lave	Lave	Lave	Lave	Lave	Lavanya	Lave

20/11/20	24/11	26/11	27/11	28/11	1/12	3/12/20
38	39	40	41	42	43	44
30	31	32	33	34	35	36
32	33	34	35	36	37	38
35	36	37	A	38	39	40
32	33	34	35	36	37	38
34	35	36	37	38	39	40
30	31	32	33	34	35	36
A	31	32	33	34	35	36
38	39	40	41	42	43	44
37	38	39	40	41	42	43
36	37	38	39	40	41	42
38	39	40	41	42	43	44
37	38	39	40	41	42	43
36	37	38	39	40	41	42
34	35	36	37	38	39	40
37	38	39	40	41	42	43
36	37	38	39	40	41	41
36	37	38	39	40	41	42
38	39	40	41	42	43	44
38	39	40	41	42	43	44
34	35	36	37	38	39	40
32	33	34	35	36	37	38
33	34	35	36	37	38	39
37	38	39	40	41	42	43
38	39	40	41	42	43	44
01	0	0	01	0	0	0
Leave	Leave	Leave	Leave	Leave	Leave	Leave

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru-57

4/12	5/12	8/12	10/12	11/12	15/12	17/12	18/12
45	46	47	48	49	50	51	52
37	38	39	40	41	42	43	44
39	40	41	42	43	44	45	46
41	A	42	43	44	45	46	47
39	40	41	42	43	44	45	46
41	42	43	44	45	46	47	48
37	38	39	40	41	42	43	44
37	38	39	40	41	42	43	44
45	46	47	48	49	50	51	52
44	45	46	47	48	49	50	51
43	44	45	46	47	48	49	50
45	46	47	48	49	50	51	52
44	45	46	47	48	49	50	51
43	44	45	46	47	48	49	50
41	42	43	44	45	46	47	48
44	45	46	47	48	49	50	51
42	43	44	45	46	47	48	49
43	44	45	46	47	48	49	50
45	46	47	48	49	50	51	52
45	46	47	48	49	50	51	52
41	42	43	44	45	A	46	47
39	40	41	42	43	44	45	46
40	41	42	43	44	45	46	A
44	45	46	47	A	48	49	50
45	46	47	48	49	50	51	52
0	01	0	0	01	01	0	0

53	54	55	56	5

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bangaluru - 560 057

ASSESSMENT

December
1/12 - 10

53	54	55	56	57	Attendance Dt.: 01/09 CH: 16 CA	%	Dt.: 1/10 CH: 15 CA	%	Dt.: 3/11 CH: 11 CA	%	Final Dt.: CH: 52 CA	%	Test Marks T1	T2	T3	Final I.A. Marks	University Marks
					10	62	13	86	11	100	44	85	27	28	27	27+8	
					12	75	14	93	10	90	46	88	30	30	30	30+10	61
					14	87	15	100	09	81	47	90	29	29	30	29+9	59
					11	68	15	100	10	90	46	88	28	29	30	29+6	59
					14	87	13	86	11	100	48	92	27	30	30	29+10	62
					10	62	13	86	11	100	44	85	28	29	30	29+9	59
					10	62	14	93	10	90	44	85	30	30	30	30+9	71
					16	100	15	100	11	100	52	100	30	30	30	30+10	64
					15	93	15	100	11	100	51	98	29	30	30	30+9	81
					15	93	14	93	11	100	50	96	30	30	30	30+9	73
					16	100	15	100	11	100	52	100	30	30	30	30+9	
					15	93	15	100	11	100	51	98	30	30	30	30+8	68
					15	93	14	93	11	100	50	96	25	30	30	28+8	
					12	75	15	100	11	100	48	92	28	29	28	28+8	61
					15	93	15	100	11	100	51	98	29	29	30	29+10	71
					14	87	15	100	11	100	49	94	27	30	0	29+10	72
					15	93	14	93	10	90	50	96	29	30	30	30+10	61
					16	100	15	100	11	100	52	100	27	30	30	29+9	59
					16	100	15	100	11	100	52	100	30	30	30	30+10	76
					13	81	14	93	11	100	47	90	28	28	30	29+9	59
					10	62	15	100	11	100	46	88	25	30	29	28+9	65
					11	68	15	100	11	100	46	88	30	30	30	30+9	77
					16	100	14	93	11	100	50	96	27	29	30	29+10	72
					16	100	15	100	11	100	52	100	30	30	30	30+10	70

1st IA - 18CIV59

ALL THE QUESTIONS ARE COMPULSORY

* Required

Email address *

Your email

An ecosystem consists of * 1 point

- ◯ Biotic component
- ◯ abiotic component
- ◯ Both a and b
- ◯ None of these

A simple detritus food chain starts with * 1 point

- ◯ green plant
- ◯ wastes of organisms and dead organisms
- ◯ both of these
- ◯ None of these

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main R...
Bengaluru - ...057

The human activity, among the following, which causes maximum environmental pollution having regional and global impact, is * 1 point

- ◯ Agriculture
- ◯ Urbanization
- ◯ Industrialization
- ◯ Mining

Ozone layer is present in * 1 point

- ◯ Troposphere
- ◯ Mesosphere
- ◯ Thermosphere
- ◯ Stratosphere

Which of the following effect is responsible for Global Warming? * 1 point

- ◯ Green house effect
- ◯ Radioactive effect
- ◯ Solar effect
- ◯ Nuclear effect

Disposable glasses and plates are made up of * 1 point

- ◯ PVC
- ◯ Polystyrene
- ◯ Polyvinyl alcohol
- ◯ Polypropylene

The burning of fossil fuels releases large amount of * 1 point

- ◯ Nitrogen
- ◯ Sulphur
- ◯ Carbon
- ◯ Hydrogen

Hotspots are regions of high * 1 point

- ◯ Rareism
- ◯ Endemism
- ◯ Diversity
- ◯ Critically endangered population

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

Which one of the following is not included under in situ conservation? * 1 point

- ◯ National Park
- ◯ Biosphere Reserve
- ◯ Wild life Sanctuary
- ◯ Zoo

A liquid fuel that was formed from the ancient remains of sea plants and animals is * 1 point

- ◯ Natural gas
- ◯ Petroleum
- ◯ Geothermal energy
- ◯ Coal

Resources that take too long a period of time to be used as a resource are called as * 1 point

- ◯ Renewable resource
- ◯ Non-renewable resource
- ◯ Exhaustible resource
- ◯ Inexhaustible resource

Which one of the following is not a gaseous biogeochemical cycle * 1 point

- ◯ Nitrogen cycle
- ◯ Carbon cycle
- ◯ Sulphur cycle
- ◯ Phosphorus cycle

About 30% of the country's coal deposits are found in * 1 point

- ◯ Karnataka
- ◯ Tamil Nadu
- ◯ Kashmir
- ◯ Bihar and Orissa

Nuclear power plant in Karnataka is located * 1 point

- ◯ Bhadravathi
- ◯ Sandur
- ◯ Kaiga
- ◯ Raichur

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main
Bengaluru

Good example of renew able energy resource is * 1 point

- ◯ Hydropower
- ◯ Coal
- ◯ Oil
- ◯ All the above

Tendency of pollutants to become concentrated in successive tropic levels is known as * 1 point

- ◯ Bioremediation
- ◯ Biomagnification
- ◯ Biopiracy
- ◯ Biorhythm

Which of the following components of the environment are effective transporters of matter? * 1 point

- ◯ Atmosphere and hydrosphere
- ◯ Atmosphere and lithosphere
- ◯ Hydrosphere and lithosphere
- ◯ Lithosphere and thermosphere

Organic farming is * 1 point

- ◯ farming without using pesticides and chemical fertilizers
- ◯ enhancing biodiversity
- ◯ Promoting soil biological activity
- ◯ All the above

An animal that feeds upon another animal is * 1 point

- ◯ Consumer
- ◯ producer
- ◯ predator
- ◯ decomposer

Eutrophication means * 1 point

- ◯ Waste water Treatment process
- ◯ Neutralization of waste water
- ◯ Enrichment of plant nutrients in water bodies
- ◯ Water purification

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

Organisms who directly feed on producers are called * 1 point

- ◯ Carnivores
- ◯ Omnivores
- ◯ Herbivores
- ◯ Decomposers

Percentage of nitrogen in earth's atmosphere is * 1 point

- ◯ 98%
- ◯ 78%
- ◯ 21%
- ◯ 12%

A food web consists of * 1 point

- ◯ A portion of food chain
- ◯ Producers, consumers and decomposers
- ◯ interlocking of food chains
- ◯ A set of similar consumers

What are the consequences of excessive mining in an area? * 1 point

- ◯ Air and water pollution
- ◯ Deforestation
- ◯ Migration of large numbers of population
- ◯ All of the above

The fossil fuel that is derived from the dead remains of plants that grew some 250 million years ago is * 1 point

- ◯ Petroleum
- ◯ Natural gas
- ◯ Coal
- ◯ LPG

Energy from the heat inside the earth is * 1 point

- ◯ Geothermal
- ◯ Natural gas
- ◯ Petroleum
- ◯ Terrathermal

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

Ex-situ conservation includes * 1 point

- ◯ Zoo
- ◯ Botanical Garden
- ◯ Germplasm Bank
- ◯ All of the above

pH of rainwater is * 1 point

- ◯ 5-6
- ◯ 6-7
- ◯ 7-8
- ◯ 8-9

Which gas is responsible for the global warming? * 1 point

- ◯ Nitrogen
- ◯ Carbon dioxide
- ◯ Noble gases
- ◯ Hydrogen

Which of the following processes adds to the removal of carbon dioxide from the atmosphere? * 1 point

- ◯ Burning fossil fuels
- ◯ Photosynthesis
- ◯ Respiration
- ◯ Deforestation

A copy of your responses will be emailed to the address you provided.

Submit

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

2nd IA-18CIV59

* Required

NAME *

Your answer

USN *

Your answer

Boron, Zinc and Manganese are usually referred to as * 1 point

- ◯ Micro materials
- ◯ Macro materials
- ◯ Soil vitamins
- ◯ MBZ nutrients
- ◯ Other:

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

Which of the following is not the environment effect of industrialization in general? * 1 point

- ◯ Solid waste
- ◯ Water pollution
- ◯ Waste pollution
- ◯ Economic growth
- ◯ Other:

The noise pollution is measured in terms of * 1 point

- ◯ Decibel
- ◯ Dobson units
- ◯ Hertz
- ◯ Candela
- ◯ Other:

Bio-remediation means the removal of contaminants from * 2 points

- ◯ Soil
- ◯ Water
- ◯ Ground Water
- ◯ Both soil and ground water
- ◯ Other:

The adverse effect of modern agriculture is * 1 point

- ◯ Water pollution
- ◯ Soil pollution
- ◯ Water logging
- ◯ All of the above
- ◯ Other:

Major purpose of most of the dams around the world is * 1 point

- ◯ Power generation
- ◯ Flood control
- ◯ Irrigation
- ◯ Drinking water supply
- ◯ Other:

Which of the following are major environmental issues involved in mining? * 2 points

- ◯ Air pollution from dust
- ◯ Water pollution
- ◯ Soil degradation
- ◯ All of the above
- ◯ Other:

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

Incineration of Municipal waster involves * 1 point

- ◯ Oxidation
- ◯ Water pollution
- ◯ Deduction
- ◯ Disintegration
- ◯ Other:

The most important remedy to avoid negative impact due to industrialization is * 2 points

- ◯ Industry should be closed
- ◯ Dont allow new industrial units
- ◯ Industry should treat all the waste generated by it before disposal
- ◯ Industries should shifted far away from human habitats
- ◯ Other:

Taj Mahal at Agra may be damaged by * 1 point

- ◯ Chorine
- ◯ Sulphur dioxide
- ◯ Earthquake
- ◯ All of these
- ◯ Other:

ELISA test is used to detect * 1 point

- ◯ Malaria
- ◯ AIDS
- ◯ Cholera
- ◯ Tuberculosis
- ◯ Other:

Green house effect is related to * 1 point

- ◯ Green trees on house
- ◯ Global warming
- ◯ Grass lands
- ◯ Greenary in country
- ◯ Other:

Green house gases are * 1 point

- ◯ Chlorofluro carbon
- ◯ Oxygen
- ◯ Chlorine
- ◯ Chloro benzene
- ◯ Other:

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - [illegible]

Sustainable development means * 2 points

- ◯ Meeting present needs without compromising on the future
- ◯ Progress in human well beings
- ◯ Balance between human needs and ability of Earth to provide resources
- ◯ All of the above
- ◯ Other:

Karnataka state "pollution control board" was established in the year * 1 point

- ◯ 1974
- ◯ 1982
- ◯ 1986
- ◯ 1976
- ◯ Other:

"Earth day" is observed on * 1 point

- ◯ 1st December
- ◯ 5th june
- ◯ 22nd april
- ◯ 1st January
- ◯ Other:

Environmental protection Act 1986 deals with * 2 points

- ◯ Air
- ◯ Water
- ◯ Land
- ◯ All of these
- ◯ Other:

Environmental pollution is due to * 1 point

- ◯ Rapid urbanization
- ◯ Deforestation
- ◯ Afforestation
- ◯ A and B
- ◯ Other:

Which of the following are natural sources of air pollution? * 1 point

- ◯ Volcanic eruption
- ◯ Solar flair
- ◯ Earthquake
- ◯ All of these
- ◯ Other:

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru

Lead poisoning may cause * 1 point

- ◯ Reduction in haemoglobin
- ◯ Kidney damage
- ◯ Mental retardation
- ◯ All of these
- ◯ Other:

Noise pollution limits at residential area is * 1 point

- ◯ 45db
- ◯ 80db
- ◯ 55db
- ◯ 90db
- ◯ Other:

Gas leaked in Bhopal tragedy was * 1 point

- ◯ Potassium cyanate
- ◯ Sodium isothio cyanate
- ◯ Methyl iso cyanate
- ◯ Ethyl iso cyanate
- ◯ Other:

The pollution caused by transportation/vehicular activities depends on * 1 point

- ◯ Type of vehicles engine
- ◯ Age of the vehicle
- ◯ Traffic congestion
- ◯ All of the above
- ◯ Other:

Sustainable development means * 1 point

- ◯ Meeting present needs without compromising on the future
- ◯ Progress in human well beings
- ◯ Balance between human needs and ability of Earth to provide resources
- ◯ All of the above
- ◯ Other:

Bio-remediation means the removal of contaminants from * 1 point

- ◯ Ground Water
- ◯ Soil
- ◯ Both soil and ground water
- ◯ Water
- ◯ Other:

Submit

3

14CIV18/28

USN | | | | | | | | | |

Question Paper Version : A

First/Second Semester B.E Degree Examination, June/July 2015
Environmental Studies
(COMMON TO ALL BRANCHES)

Time: 2 hrs.] [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. Nutrient cycling is most related to appropriately.
   a) Energy, waste, nutrients b) Autotrophs, nutrients, decomposers
   c) Light, weight, nutrients d) None of these

2. In an ecosystem, the flow of energy is
   a) Bidirectional b) Cyclic c) Unidirectional d) Multidirectional

3. Which of the following is not a part of the hydrological cycle?
   a) Precipitation b) Infiltration c) Transpiration d) Perspiration

4. The word 'Environment' is derived from
   a) Greek b) French c) Spanish d) English

5. Which of the following is the terrestrial ecosystem?
   a) Forest b) Grass land c) Desert d) All of these

6. Which of the following is not a part of atmosphere?
   a) mesosphere (b) Heterosphere (c) Biosphere (d) stratosphere.

7. EIA study will help
   (a) maximizing the benefits without over loading the planet ecosystem.
   (b) To estimate the future needs of the society
   (c) To smooth implementation of the project.
   (d) To cope up with rapid growth of population.

8. Sustainable development means
   a) Meeting present needs without compromising on the future needs.
   b) Progress in human well beings.
   c) Balance between human needs and the ability of earth to provide the resources.
   d) All of these.

9. Mineral resources are
   a) Renewable
   b) Non renewable
   c) Equally distributed
   d) None of the above

10. India has the largest share of which of the following?
    a) Manganese
    b) Mica
    c) Copper
    d) Diamond

11. Fluoride though is an effective agent to preventing dental caries, has a maximum permissible limit of
    a) 0.5 mg/*l*t of water
    b) 1.5 mg/*l*t of water
    c) 5 mg/*l*t of water
    d) 15 mg/*l*t of water

12. Carbon content is higher in
    a) Soil
    b) Atmosphere
    c) Water
    d) Lining matter

13. Cholera and typhoid are causes by
    a) Worms
    b) Virus
    c) Bacteria
    d) Fungus

14. The required iron content in drinking water as specified by BIS is
    a) 300 mg/*l*t
    b) 30 mg/*l*t
    c) 3 mg/*l*t
    d) 0.3 mg/*l*t

15. Major source of fluoride is
    a) River water
    b) Tooth paste
    c) Ground water
    d) Food products

16. LPG is a mixture of
    a) N_2 and H_2S
    b) CO_2 and N_2
    c) Propane and butane
    d) Methane and ethane

17. Nuclear fusion reaction occurs in
    a) The sun
    b) Stars
    c) Hydrogen bomb
    d) All the these

18. Choose the sequence of production of electricity from hydrogen
    i) Electrolysis of water
    ii) Performing a fuel cell reaction
    iii) Storage of hydrogen
    a) (i), (ii), (iii)
    b) (i), (iii) and (ii)
    c) (ii), (iii) and (i)
    d) (ii), (i) and (iii)

19. Chernobyl nuclear disaster occurred in the year
    a) 1984
    b) 1952
    c) 1986
    d) 1987

20. Which resources are inexhaustible?
    a) renewable
    b) fossil fuel
    c) non renewable
    d) mineral

21. Direct conversion of solar energy is attained by
    a) Solar photo voltaic system
    b) Solar diesel hybrid system
    c) Solar thermal system
    d) Solar air heater

30. Biogas is produced by,
a) Microbial activity
b) Harvesting crop
c) Both (a) and (b)
d) None of these

31. Biomass consists of,
a) Lignin
b) Hemi cellulose
c) Cellulose
d) All of these

32. Petroleum based vehicles emit traces of,
a) CO and NO_x
b) SPM
c) Aldehydes
d) CH_4

33. Urbanization is,
a) Local environmental issue
b) National environmental issue
c) Both (a) and (b)
d) Not at all an issue

34. Noise pollution limits in industrial area,
a) 45 dB
b) 80 dB
c) 65 dB
d) 90 dB

35. Ozone layers absorbs,
a) UV rays
b) Infrared rays
c) Cosmic rays
d) CO

36. Water logging is a phenomenon in which,
a) Crop patterns are related
b) Plant nutrients
c) Erosion of soil
d) None of these

37. The natural nitrogen cycle is upset due to,
a) Burning of fossil fuel
b) Modern agricultural practice of releasing excess fertilization
c) Global warming
d) Biogas production

38. Which of the following are natural sources of air pollution?
a) Volcanic eruption
b) Solar flair
c) Earthquake
d) All of these

39. Air pollution from automobiles can be controlled by fitting,
a) Electrostatic precipitator
b) Wet scrubber
c) Catalytic converter
d) All of these

40. Both power and manure provided by,
a) Nuclear plants
b) Thermal plants
c) Biogas plants
d) Hydroelectric plants

* * * * *

CBCS Scheme

USN 1 8 G 1 6 B T 0 3 9

Question Paper Version : C

First/Second Semester B.E Degree Examination, Dec.2016/Jan.2017
Environmental Studies
(COMMON TO ALL BRANCHES)

Time: 2 hrs.] [Max. Marks: 40

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the forty 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. Land conversion through burning of biomass releases.
a) O_2 b) CO c) N_2 d) SO_2

2. The movement of carbon between _____ is called carbon cycle.
a) Atmosphere and biosphere
b) Atmosphere and hydrosphere
c) Geosphere and atmosphere
d) Biosphere, atmosphere, hydrosphere and geosphere

3. The ground water depends on,
a) Amount of rain fall
b) Geological formations
c) Run off
d) All of these

4. The important three minerals mined into the maximum extent are,
a) Coal, petroleum and mercury
b) Coal, Petroleum and Iron
c) Petroleum, Radium and Xenon
d) Helium, Xenon and Coal

5. Respiration and photosynthesis are the keywords related to,
a) Nitrogen cycle
b) Sulphur cycle
c) Carbon cycle
d) Hydrological cycle

6. Mining means,
a) To conserve and preserve minerals
b) To check pollutions due to mineral resources
c) To extract minerals and ones
d) None of these

7. The most important fuel used by nuclear power plant is,
a) V-235 b) V-238 c) V-245 d) V-248

8. The pH value of the acid rain water is,
a) 5.7 b) 7.0
c) 8.5 d) 7.5

9. BOD means,
a) Biochemical oxygen demand b) Chemical oxygen demand
c) Biophysical oxygen demand d) All of these

10. Deforestation can,
a) Increase the rain fall b) Increase soil fertility
c) Introduce silt in the rivers d) None of these

11. Organic farming is,
a) Farming without using pesticides and chemical fertilizers
b) Enhances biodiversity.
c) Promotes soil biological activity.
d) All of these.

12. Chloro Fluro Carbon's (CFC) are,
a) Non toxic b) Non flammable
c) Non carcinogenic d) All of these

13. Which of the following statement is true?
a) Green plants are self nourishing
b) Producers depends on consumers
c) Biotic components includes all non-living components
d) Herbivores depend on Carnivores.

14. Major purpose of most of the Dams around the world is,
a) Power generation b) Drinking water supply
c) Flood control d) Irrigation.

15. Major causes of deforestation are,
a) Shifting cultivation b) Fuel requirements
c) Raw materials for industries d) All of these

16. Smog is,
a) A natural phenomenon b) Combination of smoke and fog
c) Colorless d) All of these

17. Which of the following conceptual spheres of the environmental is having the least storage capacity for matter?
a) Atmosphere b) Lithosphere
c) Hydrosphere d) Biosphere

18. Biosphere is,
a) The solid shell of inorganic materials on the surface of the earth.
b) The thin shell of organic matter on the surface of each comprising of all the living things.
c) The sphere which occupies the maximum volume of all the spheres.
d) All of the above.

19. The earth's atmosphere is an envelope of gases present upto a height of about _____ kms.
a) 10 b) 200 c) 1000 d) 2000

20. Primary consumer is,
a) Herbivores b) Carnivores c) Macro consumers d) Omnivores

21. World environmental day is on,
a) 5th May b) 5th June c) 18th July d) 16th August

22. Green revolution is,
a) Crop variety improvements b) Increased use of fertilizers
c) Expansion of irrigation d) All of these

23. Environmental is the life support system that includes,
a) Air b) Water c) Land d) All of these

24. The largest reservoir of nitrogen in our planet is,
a) Oceans b) Atmosphere c) Biosphere d) Fossil fuels

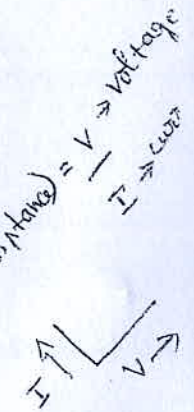
25. Which of the following is not a Green house gas?
a) Hydro chloroflourocarbons b) Methane
c) CO_2 d) SO_2

26. E.I.A can be expanded as,
a) Environment and Industrial Act b) Environment and impact activities
c) Environment Impact Assessment d) Environment Important Activity

27. The environmental (protection) act 1986 deals with:
a) Water b) Air
c) Soil d) All of these

28. The first of the major environmental protection act to be promulgated in India was:
a) The wild life protection act b) The air act
c) The noise pollution act d) None of these

29. The meaning of global warming is,
a) Increase in the temperature of climate b) A planet hotter than earth
c) Solar radiation d) Cooling effect



USN | | | | | | | | | |

First/Second Semester B.E Degree Examination, June /July 2016

Environmental Studies

(COMMON TO ALL BRANCHES)

Time: 2 hrs.] [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. The study of interaction between living organisms and environment is called as –
a) Ecosystem b) Ecology c) phytogegraphy d) phytosociology

2. Soil Erosion can be prevented by –
a) Overgrazing b) Soil Erosion c) Afforestation d) Deforestation

3. Khetri (Rajasthan) is famous for –
a) Gold mines b) Copper mines c) Granite stone d) Marble stone

4. Which one of the following is an abiotic component of the ecosystem
a) Bacteria b) Plant c) Human d) Fungi

5. Increase in fauna and decrease in flora would be harmful due to increase in
a) Diseases b) CO_2 c) O_2 d) Radioactive pollution

6. Acid rain is caused by increase in the atmospheric concentration of –
a) Ozone and dust b) SO_2 and NO_2 c) SO_3 and CO d) SO_2 and Cr

7. Gas leaked in Bhopal tragedy was –
a) Potassium isothiocynate b) Sodium isothiocynate
c) Ethyle isocynate d) Methyl isocyanate

8. Biochemical oxygen demand measures
a) Industrial pollution
b) Air pollutions
c) Polluting capacity of effluents
d) Dissolved oxygen needed to decompose organic matter

9. The ultraviolet radiation in the stratosphere are absorbed by –
a) Ozone b) Oxygen c) Sulphur dioxide d) Argon

10. Which of the following is not a green house gas?
a) Oxygen b) Carbon dioxide c) Chlorofluro carbon d) Methane

11. Formation of hole in ozone layer is maximum over –
a) India b) Antarctica c) Europe d) Africa

12. Study of trends in human population growth and prediction of future growth is called –
a) Demography b) Biography c) Kalography d) Psychology

13. Vasectomy is the method of sterilization in –
a) Man b) Woman
c) Both man and Woman d) None of these

14. The world AIDS DAY is recalled on
a) 1st July b) 5th June c) 1st December d) 2nd October

15. ICDS is a welfare scheme for –
a) Public b) Woman c) Man d) Children

16. The common pollutant present is pond and pools nearby agricultural fields are –
a) Dust b) Straw
c) Pollens d) Chemical fertilizer and pesticides

17. The highest concentration of people with HIV infection have been recorded from –
a) India b) America c) China d) Africa

18. Which endangered animal is the source of the worlds lightest, warmest and most expansive wool the shahtoash
a) Chiru b) Nilgai c) Cheetal d) Kasbmiri goat

19. The largest reservoir of nitrogen in our planet is –
a) Oceans b) Atomosphere c) Biosphere d) Fossil fuels

20. Maximum deposition of DDT will occur in
a) Phytoplankton b) Crab c) Eel d) Seagull

21. Which of the following is a bio – diversity hotspots in India
a) Gulf of Mannar b) Western Ghats c) Pachmorh d) Sunderban

22. Which of the following are likely to be present in photochemical smog?
a) Ozone b) Peroxy acetyl nitrates c) Aldehjdes d) All the above

23. Which of the following strategies should be given first preference as far as the management of plastic waste is concerned
a) Recycle b) Reuse c) Reduce the usage d) none of the above

24. Nuclear power plant in Karnataka is located at –
a) Bhadravathi b) Sandur c) Raichur d) Kaiga

25. Biogas is gaseous fuel composed mainly of
a) CH_4 and CO_2 b) CH_4 and H_2S c) CH_4 and CO d) None of the above

26. Physical pollution of water is due to –
a) D.O b) Turbidity c) P^H d) None

27. Air pollution from automobiles can be controlled by fitting –
a) Electrostatic precipitator b) Wet scrubber
c) Catalytic converter d) All the above

28. Global warming could affect –
a) Climate b) Increase in sea level
c) Melting of glacier d) All the above

29. Environmental (protection) act was enacted in the year –
a) 1986 b) 1992 c) 1984 d) 1974

30. The water (prevention and control of pollution) act was enacted in the year
a) 1986 b) 1974 c) 1994 d) 2004

31. World environment day is celebrated on –
a) 5th May b) 5th June c) 10th July d) 16th August

32. Chernobyl nuclear disaster occurred in the year –
a) 1984 b) 1985 c) 1986 d) 1987

33. Ozone layer thickness is measured in –
a) Millimolre b) Contionetre c) Decibel d) Debson units

34. Which of the following is a waterborne disease –
a) Anthrese b) Tuberculosis c) Cholera d) Small pox

35. Which one of the following gas is most abundant in atmosphere?
a) Methane b) Nitrogen c) CFC d) CO_2

36. Which of the following is not a method for water conservation –
a) Rainwater harvesting b) Groundwater extraction
c) Improving irrigation efficiency d) Avoiding water wastage

37. Silent valley is in –
a) Andhra Pradesh b) Himachal Pradesh
c) Kerala d) Tamil Nadu

38. A chronic disease called silicosis involves –
a) Heart b) Lungs c) Liver d) Kidney

39. Existing oil reserve of the earth could last for about –
a) 5000 yrs b) 500 yrs c) 50 yrs d) 5 yrs

40. EIA stands for –
a) Environmental industrial impact b) Eco industrial assessment
c) Eco impact assessment d) Environmental impact assessment

41. Water quality involves measuring the number of colonies of –
a) Coliform bacteria b) Protozoa c) Colis d) Chromozomes

42. About 3/4th of the country's coal deposits are found in –
a) Karnataka b) Tamil Nadu c) Kashmir d) Bihar and Orissa

43. What would you do to prevent the environmental damage –
a) Plant tree b) Halt deforestation c) Control pollution d) All the above

44. Which of the following is not a part of the hydrological cycle –
a) Precipitation b) Infiltration c) Transpiration d) Perspiration

45. Eutrophication is –
a) An improved quality of water in lakes
b) A process of carbon cycle
c) The result of accumulation of plant nutrients in water bodies
d) a water purification technique

46. Common energy source in Indian villages is –
a) Electricity b) Coal c) Sun d) Wood and animal dung

47. Chipko movement was started to conserve
a) Forest b) Grassland c) Deserts d) Soil

48. National park concerned with Rhinoceros is
a) Corbett b) Ranthambore c) Kaziranga d) Valley of flowers

49. The maximum number of individuals that can be supported by a given environment is called –
a) Biotic potential b) Carrying capacity
c) Population size d) Environmental resistance

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

18CIV59

CS Semester V (Section -A)

Sl. No.	USN	Name of the student	Final CIE
1	1SG17CS002	ADITYA CHANDRA SINGH	40
2	1SG17CS085	SNEH KUMAR RAI	40
3	1SG18CS001	A Y GUNARACHANA	40
4	1SG18CS002	AAKASH WAZA	39
5	1SG18CS003	ABDUL HAROONKHAN	40
6	1SG18CS005	ADITYA M	39
7	1SG18CS006	ADITYA SHARMA R	40
8	1SG18CS007	ADITYA SRIVASTAVA	39
9	1SG18CS009	AKSHATHA.M	40
10	1SG18CS010	AMANDEEP SINGH	39
11	1SG18CS011	ANKIT RAJ MISHRA	40
12	1SG18CS012	ANUSHA D B	39
13	1SG18CS013	APARNA SINGH	39
14	1SG18CS014	APOORVA A	39
15	1SG18CS015	ARPITHA H K	39
16	1SG18CS016	ARUNAKUMAR	40
17	1SG18CS017	BHARGAV TRIMAL KULKARNI	40
18	1SG18CS018	BHOOMIKA S	40
19	1SG18CS020	BINDU L	40
20	1SG18CS021	DARSHAN K S	40
21	1SG18CS023	DEEPAK B K	40
22	1SG18CS024	DEEPAK G	40
23	1SG18CS025	DEEPAK SAH	40
24	1SG18CS026	DEEPTHI YADAV G	40
25	1SG18CS027	DEVASHISH	40
26	1SG18CS028	DIVYANSHI KUSHWAHA	39
27	1SG18CS029	FARAZ KHAN	39
28	1SG18CS030	FOUZIA ANJUM S	39
29	1SG18CS031	GAURAV GUPTA	39
30	1SG18CS032	HARSH P KAVATEKAR	39
31	1SG18CS033	HARSHIT GUPTA	40
32	1SG18CS034	HARSHITHA S	39
33	1SG18CS035	HIMANI ADIGA	40
34	1SG18CS036	JYOTHAPPAGARI VYSHNAVI	39
35	1SG18CS037	K U ANJALI	40
36	1SG18CS038	KOUSHIK V UPPULURI	39
37	1SG18CS039	KUMARI MADHU	40
38	1SG18CS040	LALIT MUDGAL	39
39	1SG18CS041	LIKITH S	40
40	1SG18CS042	M LAKSHMI NAVEEN REDDY	39
41	1SG18CS043	MADHURI M K	39
42	1SG18CS044	MALLIKARJUN V R	39

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road

43	1SG18CS045	MANDARA B	40
44	1SG18CS046	MANGALA S	40
45	1SG18CS047	MANISHA L	40
46	1SG18CS048	MANJUNATH RAMA NAIK	40
47	1SG18CS049	MANU K N	39
48	1SG18CS050	MAYANK	40
49	1SG18CS051	MEENA ALEKYA T	39
50	1SG18CS052	MEGHA P	40
51	1SG18CS054	MEGHANA.G	40
52	1SG18CS055	MOHIT KUMAR SHAW	39
53	1SG18CS056	MOHIT VERMA	40
54	1SG18CS057	MONIKA A	39
55	1SG18CS059	N. MADHURAVANI	39
56	1SG18CS060	NAMRATHA	40
57	1SG18CS061	NAVEEN S R	40
58	1SG18CS062	NAVYASHREE K	39
59	1SG18CS063	NEETU RAO D	40
60	1SG18CS064	NIMISHA	40
61	1SG18CS132	NITHIN S M	40
62	1SG18CS133	VARUN R	40
63	1SG19CS400	AMITH KUMAR GUPTHA	39
64	1SG19CS402	SURESH	40 → Left
65	1SG19CS403	KIRAN KUMAR	39
66	1SG19CS404	MANJUNATH	40
67	1SG19CS407	SANDYA	40
68	1SG19CS408	SHIVA KUMAR	40
69	1SG19CS411	VIDYASHREE	39
70	1SG19CS412	YUVARAJ	39
2015 SCHEME(20 MARKS)			
71	1SG15CS016	Bhavya K H	40 → Left
72	1SG16CS408	MANO R	39 → Left

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

18CIV59

CS Semester V (Section -B)

Sl. No.	USN	Name of the student	Final CIE
1	1SG16CS037	HARSHITHA J	40
2	1SG17CS093	SUSHANT	39
3	1SG17CS102	VOONNA REETAN	40
4	1SG18CS065	NIRANJAN S	39
5	1SG18CS066	NISHANT RANA	40
6	1SG18CS068	PALLAVI R	40
7	1SG18CS069	PANCHAMI A	40
8	1SG18CS070	PARAMJEET SINGH	40
9	1SG18CS072	PRANAV PARTH	39
10	1SG18CS074	PRATIK N	40
11	1SG18CS075	PREETHA S JOIS	40
12	1SG18CS076	PREETHI U	40
13	1SG18CS077	PREETHU T B	40
14	1SG18CS078	PRERANA SHETTY	40
15	1SG18CS079	PRIYANKA V	39
16	1SG18CS080	PRIYANSHU KUMAR	39
17	1SG18CS081	R. GOVARDHANA	39
18	1SG18CS082	RAKESH S	39
19	1SG18CS083	RASHMITHA P	40
20	1SG18CS084	REVATHI. D	40
21	1SG18CS085	RISHU RAJ	40
22	1SG18CS086	RITIK SAINI	40
23	1SG18CS087	ROHAN KUMAR	40
24	1SG18CS088	ROHAN THAMMAIAH Y C	40
25	1SG18CS089	ROHIT RAI	39
26	1SG18CS090	ROOPA.U	40
27	1SG18CS091	MOHIT S	39
28	1SG18CS092	S R PRASHANTH	40
29	1SG18CS093	SABHYATA CHAUDHARY	39
30	1SG18CS094	SAGAR K	40
31	1SG18CS095	SAHIL ARYAN	39
32	1SG18CS096	SAKSHI SHEORAN	40
33	1SG18CS097	SANGEETHA R	40
34	1SG18CS098	SARIKA KASHYAP	40
35	1SG18CS099	SHAHDAT HUSSAIN	39
36	1SG18CS100	SHALINI G S	40
37	1SG18CS101	SHANU HIMKAR	40
38	1SG18CS102	SHERWIN E	40
39	1SG18CS103	SHIVANSH	40
40	1SG18CS104	SHOIB AKHTER	39
41	1SG18CS105	SHREYAS V RAO	39
42	1SG18CS106	SHUBHASHISH PATHAK	40
43	1SG18CS107	SIDDHANT PANDEY	39

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main Road
Bengaluru - 560 057

44	1SG18CS108	SIMRAN MAHTO	39
45	1SG18CS109	SIMRAN VERMA	40
46	1SG18CS110	SIRI M KASHIPATHI	40
47	1SG18CS111	SNEHAL MISHRA	39
48	1SG18CS112	SONALI M	40
49	1SG18CS113	SRI RAKSHA G	39
50	1SG18CS114	SRISHTI KUMARI	40
51	1SG18CS115	SUHAS G C	40
52	1SG18CS116	SUPRITH K S	40
53	1SG18CS117	SUPRIYA B TAVANSHI	39
54	1SG18CS118	SUPRIYA K	40
55	1SG18CS119	SWAPNIL	39
56	1SG18CS121	THANUSHREE K J	39
57	1SG18CS122	UPMA MAURYA	39
58	1SG18CS123	UTKARSH GAURAV	40
59	1SG18CS124	VISHAL SAI R	40
60	1SG18CS125	VIVEK KUMAR PATEL S	40
61	1SG18CS126	YASHA NIRANJAN	39
62	1SG18CS127	YASHASWINI S	39
63	1SG18CS128	YASHASWINI M KOTEGAR	39
64	1SG18CS129	RAKSHITHA D	40
65	1SG18CS130	DRITHI	40
66	1SG18CS131	SAHANA P	40
67	1SG19CS401	ANUSHA	39
68	1SG19CS405	RAKSHITHA M	40
69	1SG19CS406	RAMYA	39 → Left
70	1SG19CS409	VARSHA H G	39
71	1SG19CS410	VARSHITHA	40
72	1SG18CS134	SUSHMITHA N	39
2017 SCHEME(20 Marks)			
74	1SG17CS097	VAISHANAVI KASYAHAP	→ Left

Principal
Sapthagiri College of Engineering
14/5, Chikkasandra, Hesaraghatta Main r
Bengaluru - 5

1.3.1 Institution integrates cross-cutting issues relevant to Gender, Environment and Sustainability, Human Values and Professional Ethics into the Curriculum

Cells and Club activities integrates cross-cutting issues relevant to Gender, Environment and Sustainability, Human Values and Professional Ethics

- **The HASIRU- ECO Club:** Awareness programme, to enlighten students with different issues and its effects on environment.
- **NSS:** Address the issues related to human values and environmental sustainability.
- **SAMARTHINI-Women Empowerment Cell:** Make the young boys and girls gender sensitive and build a positive value that supports the girls and their rights.

Sl.No.	Name of the document	Web - Link
1.	The HASIRU- ECO Club	View Link
2.	NSS	View Link
3.	SAMARTHINI-Women Empowerment Cell	View Link