

# CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

18EE51

## Fifth Semester B.E. Degree Examination, July/August 2021 Management and Entrepreneurship

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions.*

- 1 a. Define Management. Write various characteristic of management. (06 Marks)  
b. Distinguish between standing plans and single use plans in an organisation with examples. (06 Marks)  
c. Briefly explain the steps in decision making. (08 Marks)
- 2 a. Briefly explain the various levels and skills required at different management level. (06 Marks)  
b. What is Scientific Management? Explain briefly. (06 Marks)  
c. Discuss the importance of Planning. (08 Marks)
- 3 a. Compare Autocratic, Participative and Free rein leadership style. (06 Marks)  
b. Discuss centralization and decentralization. (06 Marks)  
c. What are the principles of Organizations? (08 Marks)
- 4 a. Define Staffing. Explain importance of staffing. (06 Marks)  
b. Explain the difference between coordination and cooperation. (06 Marks)  
c. Explain various steps in selection process. (08 Marks)
- 5 a. Write a short notes on Social responsibilities of business towards different group's. (06 Marks)  
b. Explain Classification of Entrepreneurs. (06 Marks)  
c. List the characteristics of Entrepreneurs. Explain any two of them. (08 Marks)
- 6 a. Define Social Audit and Business Ethics. (06 Marks)  
b. Write the difference between Intrapreneur, Entrepreneur and Managers. (06 Marks)  
c. Explain the barriers involved in Entrepreneurship. (08 Marks)
- 7 a. What are the steps involved in starting a Small Scale Industry? (06 Marks)  
b. Explain the effect of WTO/GATT on Indian SSI. (06 Marks)  
c. List some central and state level agencies which support SSI and explain one of them as to how they assist the SSIs. (08 Marks)
- 8 a. What are the different roles of SSI's? (06 Marks)  
b. Explain the objectives and functions of TECSOK. (06 Marks)  
c. What are the functions of NSIC and SIDO? (08 Marks)
- 9 a. Write the differences between PERT and CPM. (06 Marks)  
b. Briefly outline the contents of a Project report. (06 Marks)  
c. Explain the methods of Project Appraisal. (08 Marks)
- 10 a. Explain the need and significance of a Project report. (06 Marks)  
b. Discuss the common errors in a Project report. (06 Marks)  
c. What do you mean by Project feasibility study? Explain any four analysis. (08 Marks)

\* \* \* \* \*

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

# CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

18EE52

## Fifth Semester B.E. Degree Examination, July/August 2021 Microcontroller

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions.*

- 1 a. Draw and explain the memory structure of 8051. (10 Marks)  
b. Draw and explain program status word register of 8051  $\mu$ c. Calculate the status of carry, auxiliary carry and parity flags after the addition of (i) 55h and 52h (ii) 91h and 92h (10 Marks)
- 2 a. Draw and explain 8051 connection to interface 8K external RAM and 32 K external ROM. (10 Marks)  
b. With an example, explain any four addressing modes used in 8051. (06 Marks)  
c. Identify the addressing modes of the source operand (i) MOV A, #2 ch (ii) MOV A, @ RO (iii) Add A, 50h (iv) MOV C A, @ A + dptr (04 Marks)
- 3 a. Define Assembler directives. Explain DB, ORG, EQU, END, IDATA, XDATA. (10 Marks)  
b. Write a program to complement the content of accumulator 62500 times with comments. (05 Marks)  
c. Write a subroutine to find factorial of a given number. (05 Marks)
- 4 a. Explain the following instructions with an example (i) DA A (ii) MOV C (iii) SJMP. (08 Marks)  
b. Write an ALP to toggle all bits of P0 continuously with explanation. (06 Marks)  
c. Write an delay subroutine using ALP to generate 10 msec. (06 Marks)
- 5 a. Explain the different data types supported by 8051 C with its range. (05 Marks)  
b. Write an 8051 C program to get a byte of data from P1 and then send it to P2. (05 Marks)  
c. Write an 8051 C program to generate a rectangular wave of 2 kHz with 60% duty cycle in pin P1.2. Use timer '0' in mode 1 operation. Show delay calculations. (10 Marks)
- 6 a. Explain Mode 1 programming of 8051 timer. Describe the different steps to program in Mode 1. (10 Marks)  
b. Write an 8051 C program to find the check sum byte of data stream 30 H, 46 H, 5AH, 18 H and display the BCD digits in port P0, P1 and P2. (10 Marks)
- 7 a. Write an 8051 ALP to transfer "HELLO" serially at 9600 band rate. (05 Marks)  
b. Describe bit status of SCON register. (05 Marks)  
c. Write the steps to transfer data serially and receive data serially. (10 Marks)
- 8 a. Explain the different interrupts in 8051 showing the 8051 Interrupt Structure Diagram. (10 Marks)  
b. Write a C program that continuously receives a single bit of data from P1.0 and sends it to P2.0, while simultaneously creating a square wave of 400  $\mu$ sec period on pin P2.5. Use timer '0' to create the square wave. Assume XTAL = 11.0592 MHz. (10 Marks)

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

- 9 a. With a neat Interfacing diagram, write an 8051 C to display letters 'B', 'Y' and 'E' to the LCD using delays. (10 Marks)
- b. Explain the construction and working of Stepper motor along with 4 step sequence table, step angle and steps per revolution. (10 Marks)
- 10 a. With a block diagram, explain 8255 PI chip. Also explain the control word format. (10 Marks)
- b. Write an 8051 C program to read the state of switch connected to P1.0. If low, apply 50% of power otherwise apply 75% of power to DC motor connected to pin 2.0 through optocoupler. Use PWM technique. (10 Marks)

\*\*\*\*\*

# CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

18EE53

## Fifth Semester B.E. Degree Examination, July/August 2021 Power Electronics

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Mention the types of power electronic circuits indicating input and output waveforms and two applications of each type. (10 Marks)  
b. With a neat circuit diagram and waveforms explain the operation of full wave bridge diode rectifier with purely resistive load. Derive the expression for average and RMS value of output voltage, rectification efficiency. (10 Marks)
- 2 a. With a neat circuit diagram and waveforms explain diode switched RL load with necessary equations. (08 Marks)  
b. With a block diagram explain peripheral effects of power electronic circuits. What are the remedies for them? (06 Marks)  
c. Briefly explain different types of power diodes. (06 Marks)
- 3 a. For the transistor switching circuit shown in Fig.Q3(a) Determine :  
i) The over drive factor ODF  
ii) Forced  $\beta$   
iii) Power loss in transistor.  
 $V_{CE(sat)} = 1.2V$  ;  $V_{BE(sat)} = 1.6V$ ,  $\beta_{min} = 12$ .

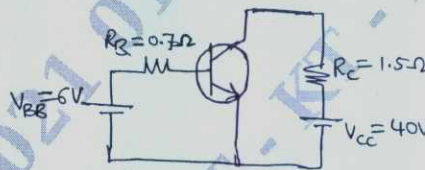


Fig.Q3(a)

- b. Draw the switching waveforms of a power MOSFET. Define different switching times associated with it. (08 Marks)  
c. Sketch the output characteristics of power BJT indicating different operating regions (06 Marks)
- 4 a. Discuss the need for providing isolation of gate drive from power circuit and explain the methods of providing isolation. (08 Marks)  
b. With a neat circuit diagram, explain the static characteristics of IGBT. (06 Marks)  
c. Compare power BJT and power MOSFET. (06 Marks)
- 5 a. Derive an expression for the anode current of thyristor with the help of a two transistor analogy. (08 Marks)  
b. Explain synchronized UJT triggering circuit with relevant waveforms. (06 Marks)  
c. Explain the VI characteristics of SCR. Also define latching and holding current. (06 Marks)

- 6 a. A string of thyristors each of rating 1600V/16A is operated from a 35.35KV supply. The maximum leakage current difference of SCRS is 35mA and reverse recovery charge difference is  $25\mu\text{C}$ . If the string efficiency is 85% determine the number of devices to be connected in series and equalizing components. (08 Marks)
- b. An SCR circuit is operated from a 300V DC supply has series inductance of  $4\mu\text{H}$ . A resistance of  $4\Omega$  and capacitance of  $0.2\mu\text{F}$  is connected across the SCR. Calculate the safe  $di/dt$  and  $dv/dt$  ratings of SCR. (06 Marks)
- c. Explain the VI characteristics of triac. (06 Marks)
- 7 a. With the help of circuit diagram and waveforms explain the working principle of on-off type AC voltage controller. Derive the expressions for RMS output voltage and average thyristor current. (10 Marks)
- b. A single phase AC voltage controller using triac shown in Fig.Q7(b) operates on a single phase supply of 230V, 50Hz. If the triac is triggered at a firing angle of  $45^\circ$  during each half cycle of input supply, calculate :
- RMS output voltage
  - RMS load current
  - Input power factor
  - Average and RMS Triac current.

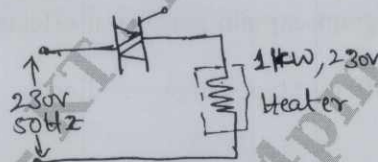


Fig.Q7(b)

(10 Marks)

- 8 a. With a neat circuit diagram and waveform explain single phase dual converter operating in circulating current mode. (10 Marks)
- b. Draw the circuit diagram of single phase half wave controlled rectifier circuit with RL load. Sketch the input voltage, output voltage and output current waveforms. (10 Marks)
- 9 a. A chopper feeding an R-L load is shown in Fig.Q9(a). If  $V = 220\text{V}$ ,  $R = 5\Omega$ ,  $L = 5\text{mH}$ ,  $f = 1\text{Hz}$ , duty cycle  $d = 0.5$  and  $E = 0$ . Calculate : i)  $I_{\min}$  and  $I_{\max}$  ii) Average value of load current.

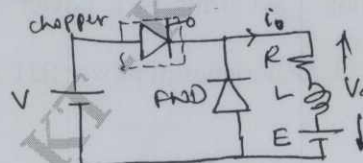


Fig.Q9(a)

(10 Marks)

- b. Explain the principle of operation of step up chopper with suitable circuit diagram. Derive the expression for average output voltage. (10 Marks)
- 10 a. With circuit diagram and waveform explain the operation of single phase full bridge inverter supplying RL load. (10 Marks)
- b. What are the advantages of PWM techniques? Explain multiple pulse width modulation and sinusoidal pulse width modulations with relevant waveforms. (10 Marks)

\*\*\*\*\*

# CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

18EE54

## Fifth Semester B.E. Degree Examination, July/August 2021 Signals and Systems

Time: 3 hrs.

Max. Marks: 100

**Note: Answer any FIVE full questions.**

- 1 a. Describe the classification of signals. (06 Marks)  
 b. A continuous signal  $X(t)$  shown in Fig Q1(b). Sketch the odd and even signal of  $X(t)$ .

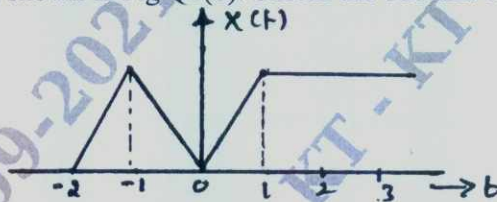


Fig Q1(b)

- c. Determine whether the signals are periodic or non-periodic (06 Marks)  
 i)  $X(t) = \cos(2\pi t) \sin(4\pi t)$   
 ii)  $X(n) = \cos\left(\frac{\pi n}{2}\right) + \sin\left(\frac{\pi n}{4}\right)$  (08 Marks)

- 2 a. Determine whether the following signals are energy or power signals. (06 Marks)  
 i)  $X(t) = t, 0 < t < 1$   
 $2 - t, 1 \leq t \leq 2$   
 $0$  otherwise  
 ii)  $X(n) = \left(\frac{1}{2}\right)^n u(n)$

- b. Let  $y(t)$  and  $x(t)$  are given in Fig Q2(b) sketch the following signal.  
 $z(t) = X(2t) * y(0.5t + 1)$

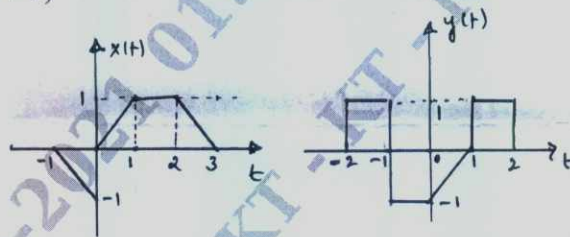


Fig Q2(b)

- c. Determine whether the following signals are linear, memoryless, causal, stable and time invariance. (06 Marks)  
 i)  $y(n) = X(n^3)$     ii)  $y(t) = \frac{d}{dt}[e^{-t}X(t)]$  (08 Marks)

- 3 a. Compute the convolution of the sequences (06 Marks)  
 $X(n) = \alpha^n u(n)$      $y(n) = \beta^n u(n)$   
 When  $\alpha \neq \beta$     and  $\alpha = \beta$

- b. Obtain the convolution of the two signals. Also sketch the result. Given (08 Marks)  
 $h(t) = 1$  for  $1 < t < T$      $X(t) = t$ ;  $0 < t < 2T$   
 $0$  otherwise     $0$  otherwise

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

- c. Determine the natural response of the system described by the following differential equation

$$\frac{d^2y(t)}{dt^2} + 3\frac{dy(t)}{dt} + 2y(t) = x(t) + 3\frac{dx(t)}{dt} \text{ with initial condition are } y(0) = 0, \left. \frac{dy(t)}{dt} \right|_{t=0} = 1$$

(06 Marks)

- 4 a. A continuous time LTI system is represented by impulse response. Determine whether the system is stable, causal and memory.

i)  $h(n) = a^n u(n+2)$     ii)  $h(t) = e^{2t} u(t-1)$ . (06 Marks)

- b. Draw the direct form I and direct form II implementation of y

$$y(n) + \frac{1}{2}y(n-1) - y(n-3) = x(n) + 3x(n-1) + 2x(n-2)$$

(06 Marks)

- c. Determine the forced response of the system described by difference equation

$$y(n) - \frac{3}{4}y(n-1) + \frac{1}{8}y(n-2) = 2x(n) \text{ with input } x(n) = 2u(n).$$

(08 Marks)

- 5 a. What are the properties of continuous time Fourier transform? State and prove Parseval's theorem. (08 Marks)

- b. Find the Fourier transform of  $x(t) = t e^{-2t} u(t)$ . Draw magnitude and phase spectra. (06 Marks)

- c. Compute the Fourier transform for the signal  $x(t)$ . Shown in Fig Q5(c).

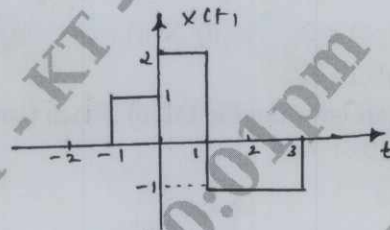


Fig Q5(c)

(06 Marks)

- 6 a. Using partial fraction expansion, determine the inverse Fourier transform

$$x(j\omega) = \frac{5j\omega + 12}{(j\omega)^2 + 5j\omega + 6}$$

(06 Marks)

- b. Find the Fourier transform of the following signal using appropriate properties

$$x(t) = \sin(\pi t) e^{-2t} u(t).$$

(06 Marks)

- c. Find the frequency response and impulse response of the system describe by the differential

$$\text{equation } \frac{d^2y(t)}{dt^2} + 5\frac{dy(t)}{dt} + 6y(t) = -\frac{dx(t)}{dt}$$

(08 Marks)

- 7 a. Describe the following properties of DTFT

i) Frequency differentiation    ii) Linearity    iii) Scaling    iv) Modulation. (08 Marks)

- b. Evaluate the DTFT of the signal  $x(n) = \left(\frac{1}{2}\right)^n u(n-4)$ . (06 Marks)

- c. Using appropriate properties, find the DTFT of the following signal

$$x(n) = \sin\left(\frac{\pi}{4}n\right) \left(\frac{1}{4}\right)^n u(n-1).$$

(06 Marks)

- 8 a. Find the inverse DTFT of

$$X(e^{j\omega}) = \frac{6}{e^{-j2\omega} - 5e^{-j\omega} + 6} \quad (06 \text{ Marks})$$

- b. Obtain the frequency and impulse response of the system having the output  $y(n)$  for the input  $x(n)$  as given below.

$$x(n) = \left(\frac{1}{2}\right)^n u(n)$$

$$y(n) = \frac{1}{4} \left(\frac{1}{2}\right)^n u(n) + \left(\frac{1}{4}\right)^n u(n) \quad (08 \text{ Marks})$$

- c. Obtain the difference equation for the system with frequency response.

$$H(e^{j\omega}) = 1 + \frac{e^{-j\omega}}{\left(1 - \frac{1}{2}e^{-j\omega}\right)\left(1 + \frac{1}{4}e^{-j\omega}\right)} \quad (06 \text{ Marks})$$

- 9 a. Determine the Z-transform of  $x(n) = -u(-n-1) + \left(\frac{1}{2}\right)^n u(n)$ . Find the ROC and pole-zero location of  $X(z)$  in the Z-plane. (06 Marks)

- b. What are the properties of Z-transform? Determine the : i) Multiplication by an exponential  
ii) Translation iii) Multiplication by ramps. (08 Marks)

- c. Find the Z-transform of the following

i)  $x(n) = na^n u(n-3)$

ii)  $x(n) = u(-n)$  (06 Marks)

- 10 a. Find the discrete-time sequence  $x(n)$  which has Z-transform

$$X(z) = \frac{-1 + 5z^{-1}}{1 - \frac{3}{2}z^{-1} + \frac{1}{2}z^{-2}} \quad \text{With ROC i) } |z| > 1 \quad \text{ii) } |z| < \frac{1}{2} \quad (06 \text{ Marks})$$

- b. A causal system has input  $x(n]$  and output  $y(n)$ . Find the impulse response of the system if

$$x(n) = \delta(n) + \frac{1}{4}\delta(n-1) - \frac{1}{8}\delta(n-2)$$

$$y(n) = \delta(n) - \frac{3}{4}\delta(n-1)$$

(06 Marks)

- c. Solve the difference equation

$$y(n) - \frac{1}{4}y(n-1) - \frac{1}{8}y(n-2) = x(n) + x(n-1). \quad \text{The initial conditions are}$$

$$y(-1) = 1, y(-2) = -1 \quad \text{with the input } x(n) = 3^n u(n).$$

(08 Marks)

\* \* \* \* \*



# CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

18EE56

## Fifth Semester B.E. Degree Examination, July/August 2021 High Voltage Engineering

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

1. a. What is Paschen's law? How do you account for the minimum voltage for breakdown under a given " $p \times d$ " condition? (06 Marks)  
b. Derive an expression for the current in the air gap that is  $i = i_0 e^{\alpha d}$  considering Townsend's first ionization co-efficient. (07 Marks)  
c. In an experiment in a certain gas it was found that the steady state current is  $5.5 \times 10^{-8}$  A at 8 KV at a distance of 0.4 cm between the plane electrodes. Keeping the field constant and reducing the distance to 0.1 cm results in a current of  $5.5 \times 10^{-9}$  A. Calculate Townsend's primary ionization coefficient  $\alpha$ . (07 Marks)
2. a. Explain briefly Bubble theory of breakdown in liquid dielectrics. (05 Marks)  
b. Explain suspended particle theory of breakdown in liquid dielectric. (05 Marks)  
c. Explain the following breakdown mechanism in solid dielectrics,  
(i) Electro Mechanical breakdown.  
(ii) Thermal breakdown. (10 Marks)
3. a. Explain with a neat diagram and waveforms the voltage multiplier circuit using Cockcraft-Walton principle. (07 Marks)  
b. A Cockcraft-Walton type voltage multiplier has 10 stages with capacitance all equal to  $0.08 \mu\text{F}$ . The supply transforms secondary voltage is 115 KV at a frequency of 150 Hz. If the load current to be supplied is 10 mA, find:  
(i) Average ripple.  
(ii) The regulation.  
(iii) The optimum number of capacitors for minimum regulation or voltage drop. (08 Marks)  
c. Explain the necessary of using isolating transformers for excitation with cascade transformer units, if the power requirement is large? (05 Marks)
4. a. With neat sketch, explain the Mark's circuit arrangement for multistage impulse generator. (07 Marks)  
b. Define the wave front and wave tail times of an impulse voltage wave. What are the percentage tolerances for a standard lighting impulse wave? (06 Marks)  
c. Calculate the front and tail resistance for 5 stages. 1000 KV with capacitance of each stage is  $5 \mu\text{F}$  and a load capacitance of  $10000 \text{ pF}$  for  $1 \mu\text{s}$  front and  $50 \mu\text{s}$  tail wave. (07 Marks)
5. a. Explain the working principle of generating voltmeter with a diagram. (08 Marks)  
b. A generating voltmeter is required to measure voltage between 15 KV to 250 KV. If the indicating meter reads a minimum current of  $2 \mu\text{A}$  and a maximum of  $35 \mu\text{A}$ , determine the capacitance of the generating voltmeter. The speed of the drive motor is 1500 rpm. (04 Marks)  
c. What is Rogowski coil? Explain with a neat diagram its principle of operation for measurement of high impulse currents. (08 Marks)

- 6 a. Explain the factors that influence the measurement of high voltage using sphere gaps. (08 Marks)  
b. Write a note on Cathode-Ray oscillographs for impulse measurements. (08 Marks)  
c. How is a compensated dc potential divider used to measure the dc voltage in HVDC systems? (04 Marks)
- 7 a. Explain the different theories of charge formation in clouds. (08 Marks)  
b. With suitable figs explain the principles and functioning of,  
(i) Expulsion gaps (ii) Protector tubes (08 Marks)  
c. Write a note on characteristics of lightning strokes. (04 Marks)
- 8 a. Write a note on surge arresters. (08 Marks)  
b. Explain the principles of insulation coordination on HV and EHV power system. (08 Marks)  
c. Write a note on insulation levels at substations with protective zones. (04 Marks)
- 9 a. Explain the operation of Schering bridge for three terminal measurements. (10 Marks)  
b. Explain discharge detection using straight detector for partial discharge measurement. (10 Marks)
- 10 a. A 33 KV, 50 Hz, high voltage Schering Bridge is used to test a sample of insulation. The various arms have the following parameters on balance. The standard capacitance 500 pF, the resistive branch 500 ohms and branch with parallel combination R and C, has 180  $\Omega$  and 0.15  $\mu$ F. Determine the value of capacitance of this sample, its parallel equivalent loss resistance, the PF and power loss under these conditions. (08 Marks)  
b. Write a short note on testing of cables. (05 Marks)  
c. Explain the methods to test the insulators and bushings. (07 Marks)

\* \* \* \* \*

# CBCS SCHEME

18CIV59

USN

--	--	--	--	--	--	--	--	--	--

Fifth Semester B.E Degree Examination, July/August 2021

## Environmental Studies

(COMMON TO ALL BRANCHES)

Time: 2 hrs.]

[Max. Marks: 100

### INSTRUCTIONS TO THE CANDIDATES

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

- 
1. The term ecosystem was proposed by  
a) A.G. Tansley  
b) Marrie Gibbs  
c) Costanza  
d) Jacob Van Verkul
  2. World environment day is on  
a) 5<sup>th</sup> May  
b) 5<sup>th</sup> June  
c) 18<sup>th</sup> July  
d) 16<sup>th</sup> August
  3. Atmosphere consists of 79% Nitrogen and 21% oxygen by  
a) volume  
b) weight  
c) density  
d) all the three
  4. Which of the following is a biotic component of an ecosystem?  
a) Fungi  
b) sunlight  
c) temperature  
d) humidity
  5. Which pyramid is always upright  
a) Biomass  
b) Energy  
c) Food chain  
d) Temperature
  6. The largest reservoir of nitrogen in our planet is  
a) Oceans  
b) Biosphere  
c) Atmosphere  
d) Fossil fuels
  7. In aquatic ecosystem phytoplankton can be considered as a  
a) Consumer  
b) Macro consumer  
c) Producer  
d) Decomposer
  8. The basic requirements of human beings are provided by  
a) agriculture  
b) nature  
c) urbanization  
d) industries
  9. Environment is the life support system that includes  
a) air  
b) water  
c) land  
d) all the above

10. In an ecosystem biological cycling of materials is maintained by  
a) producer                      b) consumer                      c) decomposer                      d) all the above
11. The primary producer in a forest ecosystem are  
a) Chlorophyll containing plants and trees  
b) Carnivores  
c) Herbivores  
d) Bacteria and other micro organisms.
12. Primary consumers are  
a) herbivores                      b) carnivores  
c) omnivores                      d) macro-consumers
13. Access to food is mainly determined by  
a) human resources                      b) household income  
c) food assistance programs                      d) society/community
14. Which of the following is a climatic factor?  
a) pressure                      b) temperature                      c) humidity                      d) all the above
15. The major atmosphere gas layer is stratosphere is  
a) hydrogen                      b) carbon dioxide                      c) ozone                      d) helium
16. Which atmospheric sphere is close to the earth surface?  
a) troposphere                      b) mesosphere                      c) stratosphere                      d) exosphere
17. Which following gas is absorbed by grew plants from the atmosphere?  
a) water vapour                      b) carbon dioxide                      c) hydrogen                      d) nitrogen
18. Most stable ecosystem is  
a) forest                      b) desert                      c) river                      d) ocean
19. Tropical forests occur is India in  
a) Karnataka                      b) Kerala and Assam                      c) Maharashtra                      d) West Bengal
20. The short term properties of the atmosphere at a given place and time is referred as  
a) climate                      b) microclimate                      c) weather                      d) humidity
21. The green plants are also called as  
a) autotrophs                      b) producers                      c) converters                      d) all the above
22. The percentage of sunlight used by the plants its photosynthesis is about  
a) 0.2%                      b) 2.0%                      c) 0.02%                      d) 20.0%
23. Driving force in an ecosystem is  
a) plants                      b) producers                      c) solar energy                      d) biomass energy
24. Environment means  
a) air and water                      b) a beautiful landscape  
c) soil and water                      d) sum total of all condition

25. Lithosphere consists of  
 a) air                                      b) water                                      c) rocks and soil                                      d) all the above
26. Most of the biotic resources are  
 a) non-renewable                                      b) renewable                                      c) Thum                                      d) none of these
27. The first international earth summit was held of  
 a) Rio-de Janeiro                                      b) Kyoto                                      c) Stockholm                                      d) Paris
28. Economic and social security is required against  
 a) unemployment                                      b) illness                                      c) old age                                      d) all the above
29. The thickness of the earth's crust is  
 a) between 5 to 70km                                      b) 200 km                                      c) 500 km                                      d) 1000 km
30. The desert among the following is not a cold desert  
 a) Gobi desert                                      b) Atacama desert                                      c) Mojave desert                                      d) Patagonian desert
31. Sundarban delta is present in which state?  
 a) Karnataka                                      b) West Bengal                                      c) Kerala                                      d) Tamil Nadu
32. Mining means  
 a) to conserve minerals                                      b) to check pollution                                      c) to extract minerals and ores                                      d) none
33. EIA can be expanded as  
 a) Environment and Industrial Act  
 b) Environment and Impact Activities  
 c) Environmental Impact Assessment  
 d) Environmental Impact Activity
34. In order to protect the health of people living along the adjoining areas of roads on should  
 a) plant trees alongside of the roads                                      b) not allow diesel driven vehicles  
 c) shift the people to other places                                      d) none of the above
35. The pollution caused by transportation depends on  
 a) type of the vehicles engine                                      b) age of the vehicle                                      c) traffic congestion                                      d) all the above
36. Which of the following is a key element of EIA?  
 a) scoping                                      b) screening  
 c) identifying and evaluating alternatives                                      d) all the above
37. Earth day is held every year on  
 a) April 22<sup>nd</sup>                                      b) 5<sup>th</sup> June                                      c) November 23<sup>rd</sup>                                      d) January 26<sup>th</sup>
38. Major purpose of most of the dams around the world is  
 a) power generation                                      b) flood control  
 c) irrigation                                      d) drinking water supply

39. The adverse effect of modern agriculture is
- a) water pollution
  - b) soil degradation
  - c) water logging
  - d) all the above
40. Which of the following is the most environment friendly agricultural practice?
- a) organic farming
  - b) using chemical fertilizers
  - c) use of insecticides
  - d) none of the above
41. Farmers have a tendency to
- a) use optimum quantity of water
  - b) over irrigate their crops
  - c) to conserve water
  - d) none of the above
42. Water logging is a phenomenon in which
- a) crop patterns are rotated
  - b) soil root zone becomes saturated due to over irrigation
  - c) erosion of soil
  - d) none of the above
43. How we can protect our environment?
- a) plant trees
  - b) control pollution
  - c) stop deforestation
  - d) all of the above
44. Organic farming is
- a) farming without pesticides and chemical fertilizers
  - b) promotes soil biological activity
  - c) enhances biodiversity
  - d) all of the above
45. Impact of mining on environment
- a) brings order into social setup
  - b) devastation of Eco system
  - c) mineral extraction has no effect on Eco system
  - d) sustainable development
46. Soil conservation is a process in which
- a) soil erosion is allowed
  - b) soil is aerated
  - c) sterile soil is made fertile
  - d) soil is protected against loss
47. Soil Erosion can be prevented by
- a) over grazing
  - b) deforestation
  - c) afforestation
  - d) removal of vegetation.

48. Bio-remediation means the removal of contaminants from  
a) water released from industries  
b) soil and ground water  
c) soil  
d) none of the above
49. Terrace farming is practiced in  
a) hilly areas                      b) deserts                      c) coastal areas                      d) plains
50. Effect of modern agriculture on soil is due to  
a) erosion                      b) acidification                      c) salinization                      d) all the above
51. Over grazing results in  
a) soil erosion                      b) productive soil  
c) increase of soil nutrients                      d) all of the above
52. Molasses from sugar industry is used to generate  
a) bio diesel                      b) hydrogen gas                      c) bioethanol                      d) biomethanol
53. Cholera and typhoid are caused by  
a) virus                      b) housefly                      c) fungus                      d) bacteria
54. Which of the following is most environmental friendly agriculture practice?  
a) using chemical fertilizer  
b) use of bio-compost materials  
c) using alluvial soil  
d) without pesticides and chemical fertilizers
55. Decreased soil fertility through rapid leaching of the essential mineral nutrients is due to  
a) reforestation                      b) deforestation  
c) over-exploitation                      d) none of the above
56. Which of the following are major environmental issues in mining activities?  
a) air pollution                      b) water pollution                      c) soil degradation                      d) all of these
57. About 71% of the earth surface is covered by  
a) land                      b) vegetation  
c) water                      d) none of the above
58. Blue baby syndrome is caused by the contamination of water due to  
a) Nitrates                      b) Arsenic                      c) phosphates                      d) sulphur
59. What is the permissible range of pH for drinking water as per the Indian standards?  
a) 6 to 9                      b) 6.5 to 7.5                      c) 6.5 to 8.5                      d) 6 to 8.5
60. What is the maximum allowable concentration of fluorides in drinking water?  
a) 1.0mg/litre                      b) 1.25 mg/litre                      c) 1.50 mg/litre                      d) 1.75 mg/litre
61. The depletion of trees is causing accumulation of  
a) NO<sub>2</sub>                      b) SO<sub>2</sub>                      c) O<sub>2</sub>                      d) CO<sub>2</sub>

62. Earth's atmosphere contains how much percentage of nitrogen?  
a) 98%                      b) 21%                      c) 78%                      d) 12%
63. India has the largest share of which of the following?  
a) manganese              b) mica                      c) copper                      d) bauxite
64. Conversion of Ammonia to  $\text{NO}_3$  by chemical oxidation is termed as  
a) nitrification              b) leaching                      c) denitrification              d) mineralization
65. Forest rich area in Karnataka is found in  
a) Western Ghats area                      b) Bandipur area  
c) Nagarahole area                      d) Sandur area
66. Mineral resources are  
a) renewable                      b) available in plenty  
c) non-renewable                      d) equally distributed
67. The groundwater depends on  
a) amount of rainfall                      b) runoff  
c) geological formations                      d) all the above
68. Physical pollution of water is due to  
a) dissolved oxygen                      b) turbidity  
c) total solids                      d) BOD
69. Nitrogen fixing bacteria exists in \_\_\_\_\_ of plants  
a) leaf                      b) stem                      c) roots                      d) flower
70. Which of the following is considered as an alternative fuel?  
a) CNG                      b) Kerosene                      c) coal                      d) petrol
71. Solar radiation consists of  
a) UV                      b) visible light                      c) infrared                      d) all of these
72. Biogas is produced by  
a) microbial activity  
b) harvesting of crops  
c) soil fertility  
d) none of these
73. Chernobyl nuclear disaster occurred in the year  
a) 1986                      b) 1984                      c) 1952                      d) 1987
74. The expansion for OTEC  
a) Ocean Thermal Energy Conversion  
b) Ocean Tidal Energy Conversion  
c) Ocean Tidal Energy Composition  
d) none of these
75. Wind mill farm is existing \_\_\_\_\_ district of Karnataka.  
a) Chitradurga                      b) Ballari                      c) Raichur                      d) Hassan



76. Wind energy generation depends on  
 a) direction of the wind  
 b) humidity  
 c) velocity of wind  
 d) precipitation
77. Which of the following source of energy is less eco friendly?  
 a) biogas  
 b) wind  
 c) solar  
 d) nuclear
78. Silver Iodide is used in  
 a) cloud seeding  
 b) nitrification  
 c) afforestation  
 d) decomposition
79. Nuclear power plant in Karnataka is located at  
 a) Bhadravathi  
 b) Sandur  
 c) Kaiga  
 d) Raichur
80. Cow dung can be used  
 a) as manure  
 b) as fuel  
 c) for production of biogas  
 d) all the above
81. Natural gas contains  
 a) carbon dioxide  
 b) hydrogen  
 c) methane  
 d) nitrogen
82. LPG(gas) is a mixture of  
 a)  $N_2$  and  $H_2S$   
 b)  $CO_2$  and  $NO_2$   
 c) Propane and Butane  
 d) Methane and Ethane
83. The source of electromagnetic radiation is  
 a) sun  
 b) wind  
 c) tide  
 d) water
84. An important NGO involved in global environmental protection is  
 a) UNICEF  
 b) green peace  
 c) BAIF  
 d) CPCB
85. ISO : 14000 standards deal with  
 a) Pollution Management  
 b) Risk Management  
 c) Environmental Management  
 d) none of these
86. Which state is having highest women literary rate in India?  
 a) Maharashtra  
 b) Kerala  
 c) Rajasthan  
 d) Karnataka
87. Which of the following animal is endangered species of India?  
 a) Black buck  
 b) Elephant  
 c) Giraffe  
 d) Lion
88. The leader of Chipko movement is  
 a) Medha Patkar  
 b) Sundarlal Bahuguna  
 c) Suresh Hablikar  
 d) Vandana Shiva
89. The Tiger Conservation Project was started it's the year  
 a) 1984  
 b) 1972  
 c) 1999  
 d) 2004
90. LANDSAT is a  
 a) satellite  
 b) aircraft  
 c) satellite launching station  
 d) none of these

91. GIS receives data from  
a) existing maps  
b) GPS  
c) remote sensing data  
d) all the above
92. Which of the following cannot be achieved by remote sensing?  
a) land use pattern  
b) detection of forest fires  
c) prevention of earthquakes  
d) none of these
93. Leachate is a coloured liquid, that comes out of  
a) sanitary landfills  
b) septic tanks  
c) compost plants  
d) aerated lagoons
94. Ozone day is observed on  
a) 3<sup>rd</sup> January  
b) 26<sup>th</sup> March  
c) 16<sup>th</sup> September  
d) 10<sup>th</sup> November
95. Greenhouse effect is related to  
a) global warming  
b) grasslands  
c) green buildings  
d) none of these
96. Bhopal gas tragedy was caused due to the leakage of  
a) Sulphurdioxide  
b) Methane  
c) Butane  
d) Methyl ISO-cyanate
97. Bhopal gas tragedy happened in the year  
a) Dec 1984  
b) Dec 1983  
c) Dec 1994  
d) Dec 1987
98. Petroleum based vehicles unit traces of  
a) CO and NO<sub>2</sub>  
b) SPM  
c) Aldehydes  
d) CH<sub>4</sub>
99. Sound beyond which of the following level can be regarded as a noise pollution?  
a) 40dB  
b) 80dB  
c) 15dB  
d) 75dB
100. Noise pollution limit at residential area  
a) 45dB  
b) 80dB  
c) 55dB  
d) 90dB

\*\*\*\*\*