Moments1

U.G. 6th Semester Examination 2022

PHYSICS (Honours)

Paper Code : SEC 2 - A & B

Full Marks : 40   Time : Two Hours

SEC 2 - A

(Renewable Energy)

Answer *all* questions.   2×20=40

Choose the correct option.

1. What should be the band gap of the semiconductors to be used as solar cell materials ?

   (a) 0.5 eV

   (b) 1.0 eV

   (c) 1.5 eV

   (d) 1.9 eV

2. Burning of fossil fuels produces —

   (a) O_2

   (b) CO_2

   (c) N_2

   (d) H_2O

3. Which of the following is a conventional way of generating electrical energy ?

   (a) Tidal power

   (b) Wind power

   (c) Solar power

   (d) Thermal power

[P.T.O.]

4. In which of the following conditions bio-gas is produced ?

    (a) Presence of oxygen

    (b) Action of aerobic microorganisms

    (c) Action of anaerobic microorganisms

    (d) Presence of fertilizers

5. In photovoltaic cell solar energy is transformed into —

    (a) Thermal energy

    (b) Electric energy

    (c) Mechanical energy

    (d) Kinetic energy

6. Tidal energy utilizes —

    (a) Kinetic energy of water

    (b) Potential energy of water

    (c) Both (a) and (b)

    (d) None of these

7. In which country has worlds largest tidal power plant ?

    (a) South Korea

    (b) USA

    (c) India

    (d) Netherland

8. Full form of OTEC is —

    (a) Ocean thermal energy consumption

    (b) Ocean techno energy conservation

    (c) Ocean thermal energy conservation

    (d) Ocean thermal energy cultivation.

9. What is tidal mill ?

   (a) A dam to store the tide

   (b) A barrage

   (c) A sluice gate

   (d) A mill driven by tidal rise and fall

10. How are waves in the ocean formed ?

    (a) due to gravity

    (b) due to wind moving across the surface

    (c) due to spin of the earth

    (d) due to movement of ocean lifes

11. Kinetic energy that results from the oscillation of water is called —

    (a) Tidal energy

    (b) Wave energy

    (c) Ocean thermal energy

    (d) Hydro energy

12. Principle behind the generation of hydroelectric power —

    (a) conversion of electric energy into gravitational energy

    (b) conversion of gravitational potential energy into thermal energy

    (c) conversion of electric energy into kinetic energy

    (d) conversion of gravitational potential energy into electrical energy

13. Rammam hydroelectric power project is located in —

    (a) Purulia

    (b) Darjeeling

    (c) Bankura

    (d) Durgapur

14. Most efficient power plant is —

   (a) Coal-based steam power plant

   (b) Nuclear power plant

   (c) Hydro electric power plant

   (d) Diesel engine power plant

15. In Piezoelectric effect a material produces electric field when —

   (a) Voltage is applied

   (b) Electric field is applied

   (c) Mechanical stress is applied

   (d) Magnetic field is applied

16. Total primary energy consumption of fuel in the world is led by —

   (a) Coal

   (b) Nuclear

   (c) Hydro

   (d) Oil

17. What is biomass energy ?

   (a) Energy generated from ocean wave

   (b) Energy generated from wind

   (c) Energy generated from plant and animal

   (d) Energy generated from river

18. To make transport fuel, the bio-ethanol is blended with —

   (a) Petrol

   (b) Diesel

   (c) Kerosene

   (d) Fenile

19. Which of the following is responsible for thermal energy ?

    (a) UV

    (b) Infrared

    (c) Gamma

    (d) X-ray

20. How does the inclination of earth's axis affect the incoming solar radiation ?

    (a) All the solar radiation is concentrated around the equator

    (b) The radiation is distributed along the entire equator

    (c) All radiation is concentrated at poles

    (d) Solar radiation is non-uniformly distributed through-out the earth's surface

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SEC 2 - B

(Basics of Programming and Scientific Word Processing)

Answer *all* questions. 2×20=40

Choose the correct option.

1. What is the main function of the command interpreter ?

   (a) to provide the interface between the API and application program

   (b) to handle the files in the operating system

   (c) to get and execute the next user-specified command

   (d) none of the mentioned

2. A CPU contains —

   (a) a card reader and a printing device

   (b) an analytical engine and a control unit

   (c) a control unit and an arithmetic logic unit

   (d) an arithmetic logic unit and a card reader

3. Which of the following is not a valid C variable name ?

   (a) int number;

   (b) float rate;

   (c) int variable_count;

   (d) int $main;

4. Which of the following declaration is not supported by C language ?

   (a) String str;

   (b) char*str;

   (c) float str = 3e2;

   (d) Both String str; & float str = 3e2;

5. What will be the output of the following C code ?

   1. #include <stdio.h>

   2. int main()

   3. {

   4. signed char chr;

   5. chr=128;

   6. printf("%d\n", chr);

   7. return 0;

   8. }

      (a) 128

      (b) – 128

      (c) Depends on the compiler

      (d) None of the mentioned

6. What will be the final value of x in the following C code ?

   1. #include <stdio.h>

   2. void main()

   3. {

   4.   int x = 5*9/3+9;

   5. }

      (a) 3.75

      (b) Depends on compiler

      (c) 24

      (d) 3

7. The first widely-used high level language developed in 1957.

   (a) C

   (b) Java

   (c) Fortran

   (d) Cobol

8. The delimeter in a FORTRAN code is —

   (a) semicolon

   (b) blank space

   (c) colon

   (d) comma

9. Which in invalid statement in FORTRAN ?

   (a) P+Q+

   (b) Continue

   (c) do i=1,100

   (d) real x(100,100)

10. First statement in FORTRAN code is —

    (a) include statement

    (b) input statement

    (c) program statement

    (d) data statement

11. Which command is used to specify the author(s) of the document in LATEX ?

    (a) \title

    (b) \author

    (c) \date

    (d) \document

12. Syntax for latex colour —

    (a) \begin{color} {text}

    (b) setcolor{text}

    (c) \textcolor{red} {text}

    (d) \color{text}

13. Correct syntax for inline formula in LATEX —

    (a) $f(x)=x^2$

    (b) {f(x)=x^2}

    (c) * f(x)=x^2*

    (d) (f(x)=x^2)

14. Which is the correct syntex for LaTeX table —

    (a) \begin{tables}

    (b) \start{tabular}

    (c) \open{table}

    (d) \begin{tabular}

15. A machine language instruction format consists of —

    (a) Operand field

    (b) Operation code field

    (c) Operation code field & operand field

    (d) None of the mentioned

16. The smallest font size in LATEX is —

    (a) \large

    (b) \small

    (c) \scriptsize

    (d) \tiny

17. What is a compiler ?

    (a) system program that converts instructions to machine language

    (b) system program that converts machine language to high-level language

    (c) system program that writes instructions to perform

    (d) none of the mentioned

18. Which of the following error can a compiler check ?

    (a) Syntax Error

    (b) Logical Error

    (c) Both Logical and Syntax Error

    (d) Compiler cannot check errors

19. The command used for creating new command in LATEX —

    (a) \newcommand

    (b) \begin{command}

    (c) \commandnew

    (d) all of the above

20. LATEX was developed by —

    (a) Dennis Ritchie

    (b) Ken Thompson

    (c) Donald Knuth

    (d) Mark Zuckerberg

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