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COLLEGE OF ENGINEERING AND TECHNOLOGY

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Value Added Courses

2021-2022

Department of Science & Humanities.

21SH01- Introduction To Nanotechnology

(Online Mode)

MARK SHEET

Sl. No	Register Number	Student Name	MARKS
1.	21TD0701	AMEERA.A	96
2.	21TD0702	ARUN M	88
3.	21TD0703	BASITH RUBANI	92
4.	21TD0704	DEVANATHAN.R	88
5.	21TD0705	DHINESH KUMAR.R	96
6.	21TD0706	FELIX	92
7.	21TD0707	HARINI .D	88
8.	21TD0708	HARISH.T	88
9.	21TD0709	JABEEN.R	88
10.	21TD0710	JANA. A	96
11.	21TD0711	JEROMELUCIAN .C	96
12.	21TD0712	KALIMULLAHKHAN.D	96
13.	21TD0713	KISHORE.R	92
14.	21TD0714	KUMARAN.K	88

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15.	21TD0715	LATHA.S	92
16.	21TD0716	MARY JENIFER M.B	96
17.	21TD0717	MOHAMMED ALZUBAIRE.M	88
18.	21TD0718	MOHANRAJ .M	92
19.	21TD0719	MUHAMMED ASHRAR .AM	88
20.	21TD0720	NANDHINI.S	96
21.	21TD0721	PRAVEENA.M	96
22.	21TD0722	PREMKUMAR.R	96
23.	21TD0723	RAAFIYA TABASSUM.Z	88
24.	21TD0724	RAGAVI.R	96
25.	21TD0725	ROGAN.M	88
26.	21TD0726	SANTHOSH.S	88
27.	21TD0727	SHARON SAJI GEORGE	96
28.	21TD0728	SHIFA JASMINE.S	96
29.	21TD0729	SOBANA.R	92
30.	21TD0730	SRIDHAR.A	92
31.	21TD0731	SUBASH.M	92
32.	21TD0732	SUKESH.M	92
33.	21TD0733	THIRUVALLURU SUJITH	96

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34.	21TD0734	VASU.P	96
35.	21TD0735	VIJI.B	96
36.	21TD0736	VISHNU.R	96
37.	21TC0451	FAIZ AHMED A	96
38.	21TC0452	HEMAMALINI J	92
39.	21TC0454	MOHAMMED UMAR B	92
40.	21TC0455	NIRUBAMASRI M	92
41.	21TC0456	PREETHISH KUMAR P	88
42.	21TC0457	RAMYA V	88
43.	21TC0458	SARASWATHY R	88
44.	21TC0460	SHANMUGA PRASATH C	88
45.	21TC0461	SIVARANJANI M	88
46.	21TC0462	SUJAY S	88
47.	21TC0463	SUSAIRAJ S	92
48.	21TC0464	SUSANA ROZHE A	88
49.	21TC0465	VASANTH S	92
50.	21TC0466	YUVASELVANATHAN B	96
51.	21TE0091	AGILAN .M	92
52.	21TE0093	BALAMURUGAN.R	92

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53.	21TE0094	DHINESH.V	96
54.	21TE0095	JAGADEESH .S	92
55.	21TE0097	PRASANTH.R	88
56.	21TE0098	RAGUL .S	96
57.	21TE0099	SAKTHIVEL.S	96
58.	21TE0100	SANTHOSH.R	92
59.	21TE0101	SELVAM.R	92
60.	21TE0102	SURESH KUMAR.R	88

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VALUE ADDED COURSE

2021-2022

Department of Science & Humanities.

21SH01-Introduction to Nanotechnology

NAME:
CLASS:
DATE:

1). Which one of the following is an example for semiconducting nanowires?

a) Nickel
b) Platinum
c) Silicon
d) All of the above

Answer-c

2). The absorption and adsorption of molecules are fast and high in _____ materials?

a) Nano materials
b) Bulk materials
c) Both a and b
d) None of the above

Answer-d

3). Which one of the following is an example for thermal properties of nanostructure?

a) Melting temperature
b) Absorption and scattering of light
c) Both a and b
d) None of the above

Answer-a

4). In which year does the scanning tunneling microscopy was invented?

a) 1999
b) 2003
c) 1934

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d) 1982

Answer-c

5). Who discovered nanotubes?

a) Gerd Binning
b) Alex Zettl
c) PM Ajayan
d) Sumio Iijima

Answer-c

6). Who is the co-discover of the buckminsterfullerence?

a) Gerd Binning
b) Hary Kroto
c) PM Ajayan
d) Sumio Iijima

Answer-b

7). Who built the first molecular motor based on CNT?

a) Gerd Binning
b) Hary Kroto
c) PM Ajayan
d) Alex Zettl

Answer-d

8). Which one of the following is an example for electrical properties of nanostructure?

a) Melting temperature
b) Tunnelling current
c) Both a and b
d) None of the above

Answer-b

9). Which one of the following used in solar cells?

a) Carbon nanotubes
b) Nanorods
c) Nanobots

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d) Carbon rod

Answer-a

10). What is the standard form of SEM?

a) Scanning Electron Microscope
b) Scanning Electrode Microscope
c) Scanning Electrical Microscope
d) None of the above

Answer-a

11). Which one of the following is an example for insulating nanowires?

a) Sio2
b) InP
c) Si
d) All of the above

Answer-a

12). The NEMS/MEMS, respirocytes, and microarrays are types of _____ ?

a) Nanodevices
b) Nanocrystalline nanoparticle
c) Nanostructured nanoparticle
d) None of the above

Answer-a

13). The size of polymeric nanoparticle nanosystem is around _____ ?

a) 1-300 cm
b) 1-500 mm
c) 10-1000 nm
d) None of the above

Answer-c

14). The diameter of the hair can be measured in terms of _____ meters?

a) 1 mm
b) <10 nm
c) 100 micro

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d) None of the above

Answer-c

15). The nanostructures are categorized into _____ types according to their dimensions?

a) One
b) Two
c) Three
d) Four

Answer-c

16). Which one of the following is an example of zero-dimensional nanostructure?

a) Nanoparticles
b) Nanorods
c) Nanotubes
d) All of the above

Answer-a

17). The particle size range of nano alginate is around _____ nanometers?

a) 1-2
b) 4-9
c) 4.6-9
d) 53.5-63.1

Answer-c

18). The absorption and adsorption of molecules are slow and low in _____ materials?

a) Nanomaterials
b) Bulk materials
c) Both a and b
d) None of the above

Answer-b

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19). Which one of the following is an advantage of nanotechnology?

a) Increased stability
b) Leakage of drug
c) Low solubility
d) All of the above

Answer-a

20). What is the standard form of TEM?

a) Transmission Electron Microscope
b) Transformer Electrode Microscope
c) Transceiver Electrical Microscope
d) None of the above

Answer-a

21). The size of an ant can be measured _____ ?

a) 1 mm
b) <10 nm
c) 2-9.5 mm
d) 3-6mm

Answer-a

22). The dimension range of nanorods are from _____ nanometers?

a) 1-2
b) 12.9-23.9
c) 4.6-9
d) 1-100

Answer-d

23). The types of nano computing are categorized into _____ types?

a) One
b) Two
c) Three
d) Four

Answer-c

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24). Which one of the following is an optical type nanosensor?

a) Proximity and ambient light
b) DNA interaction
c) Enzymatic interaction
d) All of the above

Answer-a

25). The range of electrostatic force in the air is around _____ meters?

a) 10 mm
b) 100 cm
c) 100 nm
d) None of the above

Answer-c

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VALUE ADDED COURSE

2021-2022

Department of Science & Humanities.

21SH01-Introduction to Nanotechnology

NAME: AMEERA.A
CLASS: I/S&H
DATE: 20/08/2021

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24/25 96%

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Certificate of Completion

2021-2022

This is to certify that Mr/Ms ..... RAHUL S .....

Year..... I ..... Department..... S&H ..... has successfully Completed the Value added course.

SCORE: ..... 96 .....

COURSE TITLE: ..... INTRODUCTION to NANOTECHNOLOGY .....

COURSE DURATION: ..... 9-8-21 to 13-8-21 .....

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VALUE ADDED COURSES

2021-2022

Department of Science & Humanities

21SH02- Atomic and Nuclear Physics
(Online Mode)

MARK SHEET

Sl. No	Register Number	Student Name	MARKS
1.	21TH0251	AJAY S	96
2.	21TH0252	ANJUM S	88
3.	21TH0253	ASWINI S	92
4.	21TH0254	DHARUN SOORYA KUMAR S	92
5.	21TH0256	GANESH R	88
6.	21TH0257	HARIHARAN V	96
7.	21TH0258	HEERA R.K	88
8.	21TH0259	HEMA M	92
9.	21TH0260	JEEVANKUMAR M	92
10.	21TH0261	KAVIYA S	88
11.	21TH0262	KAVIYA V	96
12.	21TH0263	KUMARAN J	88
13.	21TH0265	MANIBHARATHI V	96
14.	21TH0268	MOHAMED FAROOK M	92
15.	21TH0269	NANDHINI A	88

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16.	21TH0270	POOJA R V	88
17.	21TH0271	PUNITHA S	88
18.	21TH0272	PUSHPARAJ P	96
19.	21TH0273	RANJANA J	92
20.	21TH0274	SANGAVI C	92
21.	21TH0275	SHARMILA S	96
22.	21TH0276	SIVAPRAGASAM P	96
23.	21TH0277	SOUNDHARYA S	92
24.	21TH0278	SOWMIYA M	88
25.	21TH0279	SRIRAM G	96
26.	21TH0280	VANITHA S	96
27.	21TH0281	VIMALRAJ N	88
28.	21TH0282	VINOTHKUMAR V	92
29.	21TB0111	ARASAKUMAR.S	88
30.	21TB0113	DHIVAGAR G	92
31.	21TB0114	HARIHARAN S	96
32.	21TB0115	KARAN.P	98
33.	21TB0117	ROHIT BRUNO.K	96

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VALUE ADDED COURSES

2021-2022

Department of Science & Humanities.

21SH02-Atomic Physics

NAME:
CLASS:
DATE:

1. What is the charge of an electron?
   A. +1
   B. 0
   C. -1
   D. +2
   Answer: C. -1

2. Which model of the atom proposed that electrons orbit the nucleus in fixed paths?
   A. Dalton's Model
   B. Thomson's Model
   C. Rutherford's Model
   D. Bohr's Model
   Answer: D. Bohr's Model

3. What is the principal quantum number (n) primarily associated with?
   A. Electron spin
   B. Electron energy level
   C. Electron orbital shape
   D. Electron magnetic moment
   Answer: B. Electron energy level

4. What is the maximum number of electrons that can be accommodated in the n=3 shell?
   A. 2
   B. 8
   C. 18
   D. 32
   Answer: C. 18

5. Which scientist is credited with the discovery of the electron?
   A. Niels Bohr
   B. Ernest Rutherford
   C. J.J. Thomson

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D. James Chadwick
Answer: C. J.J. Thomson

6. What is the atomic number of an element?
   A. The number of neutrons in the nucleus
   B. The number of protons in the nucleus
   C. The number of electrons in the nucleus
   D. The number of nucleons in the nucleus
   Answer: B. The number of protons in the nucleus

7. What term describes the phenomenon where an electron jumps to a higher energy level when a photon is absorbed?
   A. Excitation
   B. Ionization
   C. Grounding
   D. Emission
   Answer: A. Excitation

8. Which rule states that no two electrons in an atom can have the same set of quantum numbers?
   A. Hund's Rule
   B. Aufbau Principle
   C. Pauli Exclusion Principle
   D. Heisenberg Uncertainty Principle
   Answer: C. Pauli Exclusion Principle

9. What is the term for the lowest energy state of an atom?
   A. Ground state
   B. Excited state
   C. Ionized state
   D. Metastable state
   Answer: A. Ground state

10. Which of the following particles is found in the nucleus of an atom?
    A. Electron
    B. Proton
    C. Positron
    D. Neutrino
    Answer: B. Proton

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11. What phenomenon describes the splitting of spectral lines in the presence of a magnetic field?
    A. Photoelectric effect
    B. Zeeman effect
    C. Stark effect
    D. Compton effect
    Answer: B. Zeeman effect

12. Which of the following is an isotope of carbon?
    A. 12C^{12}\text{C}12C
    B. 13N^{13}\text{N}13N
    C. 14O^{14}\text{O}14O
    D. 15C^{15}\text{C}15C
    Answer: A. 12C^{12}\text{C}12C

13. Which quantum number describes the shape of an electron orbital?
    A. Principal quantum number (n)
    B. Angular momentum quantum number (l)
    C. Magnetic quantum number (m)
    D. Spin quantum number (s)
    Answer: B. Angular momentum quantum number (l)

14. Who proposed the uncertainty principle?
    A. Niels Bohr
    B. Werner Heisenberg
    C. Albert Einstein
    D. Max Planck
    Answer: B. Werner Heisenberg

15. What is the energy of a photon related to its wavelength?
    A. Directly proportional
    B. Inversely proportional
    C. Not related
    D. Exponentially proportional
    Answer: B. Inversely proportional

16. What is the Balmer series?
    A. The spectral lines of hydrogen in the infrared region
    B. The spectral lines of hydrogen in the ultraviolet region
    C. The spectral lines of hydrogen in the visible region
    D. The spectral lines of hydrogen in the X-ray region
    Answer: C. The spectral lines of hydrogen in the visible region

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17. Which principle states that electrons fill orbitals starting with the lowest energy level?
    A. Pauli Exclusion Principle
    B. Hund's Rule
    C. Aufbau Principle
    D. Heisenberg Uncertainty Principle
    Answer: C. Aufbau Principle

18. What is the speed of light in a vacuum?
    A. 3×1063 \times 10^63×106 m/s
    B. 3×1073 \times 10^73×107 m/s
    C. 3×1083 \times 10^83×108 m/s
    D. 3×1093 \times 10^93×109 m/s
    Answer: C. 3×1083 \times 10^83×108 m/s

19. What is the Heisenberg Uncertainty Principle?
    A. It states that the position and momentum of a particle cannot both be precisely determined at the same time
    B. It states that energy levels are quantized
    C. It describes the wave-particle duality of light
    D. It states that electrons fill orbitals starting from the lowest energy level
    Answer: A. It states that the position and momentum of a particle cannot both be precisely determined at the same time

20. Which orbital corresponds to an angular momentum quantum number (l) of 1?
    A. s
    B. p
    C. d
    D. f
    Answer: B. p

21. What is an ion?
    A. An atom with an equal number of protons and electrons
    B. An atom with more protons than electrons
    C. An atom with more electrons than protons
    D. An atom with a net electric charge due to the loss or gain of electrons
    Answer: D. An atom with a net electric charge due to the loss or gain of electrons

22. Which scientist is associated with the planetary model of the atom?
    A. J.J. Thomson
    B. Niels Bohr
    C. Ernest Rutherford
    D. Max Planck
    Answer: B. Niels Bohr

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23. What is the term for the discrete energy levels within an atom?
    A. Energy states
    B. Quantum levels
    C. Electron shells
    D. Orbitals
    Answer: C. Electron shells

24. What does the Pauli Exclusion Principle state about electrons in the same orbital?
    A. They must have opposite spins
    B. They must have the same energy
    C. They must have the same spin
    D. They must have different energy
    Answer: A. They must have opposite spins

25. Which phenomenon supports the particle nature of light?
    A. Interference
    B. Diffraction
    C. Photoelectric effect
    D. Polarization
    Answer: C. Photoelectric effect

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VALUE ADDED COURSES

2021-2022

Department of Science & Humanities.

21SH02-Atomic Physics

NAME: AJAY.S
CLASS: I/S&H
DATE: 20/08/2021

1. What is the charge of an electron?
   A. +1
   B. 0
   C. -1
   D. +2

2. Which model of the atom proposed that electrons orbit the nucleus in fixed paths?
   A. Dalton's Model
   B. Thomson's Model
   C. Rutherford's Model
   D. Bohr's Model

3. What is the principal quantum number (n) primarily associated with?
   A. Electron spin
   B. Electron energy level
   C. Electron orbital shape
   D. Electron magnetic moment

4. What is the maximum number of electrons that can be accommodated in the n=3 shell?
   A. 2
   B. 8
   C. 18
   D. 32

5. Which scientist is credited with the discovery of the electron?
   A. Niels Bohr
   B. Ernest Rutherford
   C. J.J. Thomson
   D. James Chadwick

6. What is the atomic number of an element?
   A. The number of neutrons in the nucleus
   B. The number of protons in the nucleus

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C. The number of electrons in the nucleus
D. The number of nucleons in the nucleus

7. What term describes the phenomenon where an electron jumps to a higher energy level when a photon is absorbed?
   A. Excitation
   B. Ionization
   C. Grounding
   D. Emission

8. Which rule states that no two electrons in an atom can have the same set of quantum numbers?
   A. Hund's Rule
   B. Aufbau Principle
   C. Pauli Exclusion Principle
   D. Heisenberg Uncertainty Principle

9. What is the term for the lowest energy state of an atom?
   A. Ground state
   B. Excited state
   C. Ionized state
   D. Metastable state

10. Which of the following particles is found in the nucleus of an atom?
    A. Electron
    B. Proton
    C. Positron
    D. Neutrino

11. What phenomenon describes the splitting of spectral lines in the presence of a magnetic field?
    A. Photoelectric effect
    B. Zeeman effect
    C. Stark effect
    D. Compton effect

12. Which of the following is an isotope of carbon?
    A. 12C^{12}\text{C}12C
    B. 13N^{13}\text{N}13N
    C. 14O^{14}\text{O}14O
    D. 15C^{15}\text{C}15C

13. Which quantum number describes the shape of an electron orbital?
    A. Principal quantum number (n)
    B. Angular momentum quantum number (l)

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C. Magnetic quantum number (m)
D. Spin quantum number (s)

14. Who proposed the uncertainty principle?
A. Niels Bohr
B. Werner Heisenberg
C. Albert Einstein
D. Max Planck

15. What is the energy of a photon related to its wavelength?
A. Directly proportional
B. Inversely proportional
C. Not related
D. Exponentially proportional

16. What is the Balmer series?
A. The spectral lines of hydrogen in the infrared region
B. The spectral lines of hydrogen in the ultraviolet region
C. The spectral lines of hydrogen in the visible region
D. The spectral lines of hydrogen in the X-ray region

17. Which principle states that electrons fill orbitals starting with the lowest energy level?
A. Pauli Exclusion Principle
B. Hund's Rule
C. Aufbau Principle
D. Heisenberg Uncertainty Principle

18. What is the speed of light in a vacuum?
A. 3×1063 \times 10^63×106 m/s
B. 3×1073 \times 10^73×107 m/s
C. 3×1083 \times 10^83×108 m/s
D. 3×1093 \times 10^93×109 m/s

19. What is the Heisenberg Uncertainty Principle?
A. It states that the position and momentum of a particle cannot both be precisely determined at the same time
B. It states that energy levels are quantized
C. It describes the wave-particle duality of light
D. It states that electrons fill orbitals starting from the lowest energy level

20. Which orbital corresponds to an angular momentum quantum number (l) of 1?
A. s
B. p
C. d
D. f

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21. What is an ion?
   A. An atom with an equal number of protons and electrons
   B. An atom with more protons than electrons
   C. An atom with more electrons than protons
   D. An atom with a net electric charge due to the loss or gain of electrons

22. Which scientist is associated with the planetary model of the atom?
   A. J.J. Thomson
   B. Niels Bohr
   C. Ernest Rutherford
   D. Max Planck

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Year..... I ..... Department..... S & H ..... has successfully Completed the Value added course.

SCORE: ..... 88 .....

COURSE TITLE: ATOMIC & NUCLEAR PHYSICS

COURSE DURATION: 9-8-21 to 13-8-21

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