

Work Sheet for Introduction to Emerging Technology

Part I: - Choose the Best Answer

1. A network of devices that can sense, accumulate and transfer data over the internet without any human intervention is_____?
A. AI
B. HCI
C. IoT
D. IR
2. A feature of IoT that can measure a physical quantity (like temperature, humidity, etc.) and convert it into signal, which can be read and interpreted by the microcontroller unit is_____?
A. AI
B. Sensor
C. Connectivity
D. Active engagement
3. Which one of the following statements is true about MR?
A. MR is a digital overlay that allows interactive virtual elements to integrate and interact with the real-world.
B. Mixed reality hardware is still emerging and hasn't quite broken into the mainstream consumer market, most likely due to the price.
C. Mixed reality applications sometimes require exponentially more processing power and thus require more powerful hardware.
D. All
4. Which one of the following is **Not** part of IoT base smart home?
A. Safety Monitoring
B. Smart Home Appliances
C. Remote Control Appliances
D. Smart Parking
5. Which one of the following is the application of AR in the education?
A. Reasonable learning materials
B. Interactive lessons
C. Higher engagement
D. All
6. IoT is the interaction of everyday object's computing devices through the Internet that enables the sending and receiving of useful data and by which organization this definition was given?
A. Oxford dictionary
B. IEEE
C. 2020 conceptual framework
D. Internet Engineering Task Force
7. Which one of the following is domain of IoT?
A. Connected industry,
B. Smart-city,
C. Smart-home,
D. Smart-energy,
E. Connected car,
F. All
8. Which one of the following is application of IoT in the agriculture?
A. Monitoring quality of soil in real time
B. Regulating water supply and controlling usage of water
C. Monitoring and measuring humidity, temperature etc
D. All

9. Which one of the following is true about IoT?
- Connection of smart devices in the presence of internet and can be directly operated by human beings
 - A network of devices that can sense, accumulate and transfer data over the internet with human intervention
 - IoT is the networking of smart objects, that intelligently communicating in the presence of internet protocol.**
 - It enables the interaction in the physical and virtual world in the form of Human-to-Machine (H2M) communication in the cloud.
10. Which one of the following is the application of IoT?
- Consumer Use
 - Insurance
 - Manufacturing
 - Retail
 - Utilities
 - All**
11. _____ reducing spoilage and crop waste with better monitoring, accurate ongoing data obtaining, and management of the agriculture fields.
- Green Houses
 - Compost
 - Offspring Care
 - Field Monitoring**
12. Which of the following is a part of IoT based smart City?
- Structural Health
 - Lightning
 - Safety
 - Smart Parking
 - Green Houses
 - All**
13. Which one of the following is correct about the history of IoT from old to the recent?
- Internet connecting PCs->Internet of Things->Mobile Internet
 - Mobile Internet->Internet of Things->Internet Connecting PCs
 - Mobile Internet->Internet Connecting PCs->Internet of Things
 - Internet connecting PCs-> Mobile Internet ->Internet of Things**
14. Which one of the following is **Not** disadvantage of IoT?
- It is vulnerable for hackers to steal confidential information.
 - There is international standard of compatibility.**
 - It is vulnerable for virus transmission and corrupts the devices or system.
 - It is difficult to collect and manage data that generated from different IoT devices.
15. _____ utilizes existing and emerging technology for sensing, networking, and robotics.
- IoT**
 - Emerging Technology
 - AI
 - AR
16. The component of AR system architecture that have responsibility for collecting data from the real world is _____?
- Infrastructure Tracker Unit**
 - Processing Unit
 - Visual Unit
 - Augmented Reality Systems
17. According to the 2020 conceptual framework IoT is formulated as _____?
- IoT= Server+ Data+ computer + Sensors
 - IoT= Services+ Data+ Networks + Sensors**
 - IoT= Services+ Data+ Networks + Servers
 - IoT= Serving+ Data+ Networks + Sensors

18. _____ model is used to extend the capability of device by sending data to cloud for analysis.
- A. Device to Cloud Communication
 - B. Device to Device Communication
 - C. Device to Gateway Communication
 - D. Device to Satellite Communication
19. The IoT layer that takes data collected in the sensing layer and analyses the data to make decisions based on the result is _____?
- A. Application Layer
 - B. Sensing Layer
 - C. Networking Layer
 - D. Data Processing Layer
20. Which one of the following is used to Control of growing conditions of the offspring in animal farms to ensure its survival and health?
- A. Compost
 - B. Field Monitoring
 - C. Waste Management
 - D. Offspring Care
21. _____ used to Switching on and off remotely appliances to avoid accidents and save energy.
- A. Smart Home Appliances
 - B. Remote Control Appliances
 - C. Safety Monitoring
 - D. Intrusion Detection Systems
22. An IoT based smart city have Digital video monitoring, fire control management, public announcement systems and this is named as _____?
- A. Smart Parking
 - B. Energy and Water Use
 - C. Structural Health
 - D. Safety
23. Which one of the following is the example of **device-to-device** IoT connection?
- A. Nest Lab Learning Thermostat
 - B. Samsung Smart TV
 - C. Lights, bulbs, and locks
 - D. Fitness tracker
 - E. A and B
 - F. A and D
24. Which one of the following is **Correct** about the Evolution of Internet (1995-2015)?
- A. Internet of things-> Web2
 - B. Internet Connecting PCs-> WWW
 - C. Mobile Internet-> Web3
 - D. Internet of things-> WWW
 - E. Internet Connecting PCs-> Web2
 - F. Mobile Internet-> WWW
25. Online and in-store shopping sales figures can control warehouse automation and robotics, information gleaned from IoT sensors. This application of IoT is _____?
- A. Retail
 - B. Manufacturing
 - C. Insurance
 - D. Consumer Use
26. Which one of the main capabilities of a typical IOT device?
- A. Being able to sense and record data
 - B. Being able to perform light computing and finally
 - C. Being able to connect to a network and communicate the data
 - D. All
27. Which one of the following is correct about KAA?
- A. Manage an unlimited number of connected devices.
 - B. Collect data in private channels.
 - C. Default database storage is MongoDB.
 - D. Worldwide community.
 - E. Supports a wide range of hacker boards.
28. Which one of the following platforms of IoT Supports a wide range of hacker boards?
- A. ThingsBoard
 - B. Zetta
 - C. DeviceHive
 - D. ThingSpeak

29. _____Control micro-climate conditions to maximize the production of fruits and vegetables and its quality.
- A. Animal Farming/Tracking
 - B. Field Monitoring
 - C. Waste Management
 - D. Green Houses**
30. Motion sensors can:
- A. Trigger a doorbell when someone approaches the front door.
 - B. Alert you when kids enter restricted areas in the home, like the basement, workout room, or medicine cabinet.
 - C. Save energy by using motion sensor lighting in unoccupied spaces.
 - D. Notify you if animals enter areas where they're not supposed to be.
 - E. All**
31. Which one of the following is example of Environmental monitoring?
- A. Monitoring soil for moisture and vibration levels in order to detect and prevent landslides.
 - B. Monitoring forests and protected land for forest fires.
 - C. Monitoring for Natural désastres like earth quake and tsunami warnings
 - D. Monitoring data centers for air température and humidity
 - E. Monitoring Air pollution, Soil moisture, Water quality.
 - F. All**
32. _____Monitoring of vibrations and material conditions in buildings, bridges and historical monuments.
- A. Safety Monitoring
 - B. Intrusion Detection Systems
 - C. Energy and Water Use
 - D. Structural Health**
33. Which one of the following sensors can use to measure the change in motion as well as the orientation of the devices?
- A. Motion Sensor**
 - B. Environmental Sensors
 - C. Position sensors
 - D. Global Positioning System
34. In IoT devices, the network layer is implemented by using diverse?
- A. Wi-Fi, Bluetooth,
 - B. Zigbee,
 - C. ZWave,
 - D. LoRa,
 - E. Cellular network
 - F. All**
35. _____is the integration of digital information with the user's environment in Realtime.
- A. AR**
 - B. VR
 - C. MR
 - D. HMD
36. _____is fully immersive, which tricks your senses into thinking you're in a different environment or world apart from the real world.
- A. VR**
 - B. MR
 - C. AR
 - D. HTC
37. Users can be transported into a number of real-world and imagined environments using one of the following AR technologies Except_____.
- A. HTC Vive
 - B. Oculus Rift
 - C. Google Cardboard
 - D. Microsoft HoloLens**

38. Which one of the following is standalone VR devices?
 A. Oculus Rift
 B. PlayStation VR
 C. Google Cardboard
 D. Google Glass
39. _____ allows you to see and engage yourself in the world around you.
 A. AR
 B. VR
 C. MR
 D. AV
40. A digital overlay that allows interactive virtual elements to integrate and interact with the real-world is _____?
 A. VR
 B. MR
 C. AR
 D. AV
41. Which one of the following is MR technology?
 A. Microsoft HoloLens
 B. Magic Leap.
 C. Oculus Rift, HTC Vive
 D. PlayStation
 E. A and B
 F. A and D
42. _____ add real world information to a computer-generated environment.
 A. AR
 B. AV
 C. MR
 D. VR
43. _____ add a computer-generated content to real world.
 A. AR
 B. MR
 C. VR
 D. AV
44. Among the following one is **Not** true about HMD.
 A. It has ergonomics lack
 B. High prices
 C. Relatively high Mobility.
 D. Dominant display technology
45. Which one of the following is the significant change of AR in the medical area?
 A. Surgery (minimally invasive surgery)
 B. Education of future doctors
 C. Diagnostics
 D. Detect the signs of depression
 E. All
46. _____ is using augmented reality to show the simulation of the vision, harmed by the different diseases.
 A. Medical App Aye Decide
 B. Three Dimensional(3D)
 C. AUGmedics
 D. Google Contact Lens
47. Generally, AR provides the following benefits to patients and healthcare workers except_____.
 A. Make procedures less tolerable.
 B. Better aftercare
 C. Medical training and education.
 D. Assistance in medical procedures and routine tasks
48. About 40% of the first intravenous injections fail, and this ratio is even higher in the case of children and elderly patients and which AR device is used to cope with this negative statistic?
 A. AccuVein
 B. Augmedics
 C. AUGmedics
 D. AyeDecide
 E. Google Contact Lens
 F. EHBO app

49. _____ is a form of emerging technology that allows users to overlay computer generated content in the real world.
- A. AR
B. AV
C. VR
D. MR
50. Which one of the following is **Not** AR in Entertainment?
- A. AR in Games
B. AR in Music
C. AR on TV
D. AR in Sports
E. AR in the theater
51. Which one of the following is correct about VR?
- A. VR is fully immersive, which tricks your senses into thinking you're in a different environment or world apart from the real world.
B. VR is a computer-simulated reality.
C. It is the use of computer technology to create a simulated environmental.
D. It refers to computer technologies using reality headsets to generate realistic sounds, images and other sensations that replicate a real environment or create an imaginary world.
E. All
52. Which one of the following is **Not** the negative aspects of internet?
- A. It has created new concerns about privacy
B. It has been hampered by spam and viruses.
C. It serves as a medium for communication across the globe, it threatens to cut off people who lack access to it.
D. Allowing the creation of new tools and new ways for people to interact.
53. Among the following alternative which one is **Not** the basic ethical principle.
- A. Integrity
B. Objectivity
C. Competence and due care
D. Confidentiality
E. Professional behavior
F. Respect privacy
54. Which one of the following is **Not** the general ethical principle?
- A. Avoid harm.
B. Be honest and trustworthy.
C. Be fair and take action not to discriminate.
D. Respect privacy.
E. Honor confidentiality
F. Professional behavior
55. If you are a professional which one of the following is your responsibility?
- A. Attempt to achieve high quality in both the processes and products of professional work.
B. Maintain high standards of professional competence, conduct, and ethical practice.
C. Know and respect existing rules affecting to professional work.
D. Accept and provide appropriate professional review.
E. Perform work only in areas of competence
F. All
56. Which one of the following is **correct** about Augmented Reality (AR)?
- A. AR overlays digital content on top of the real-world.
B. AR is a digital overlay that allows interactive virtual elements to integrate and interact with the real-world.
C. AR is content which is 100% digital and can be enjoyed in a fully immersive environment.
D. AR tech: Oculus Rift, HTC Vive, and PlayStation VR.

57. _____ can be used to enhance content and instruction within the traditional classroom, supplement instruction in the special education classroom, extend content into the world outside the classroom.
- A. AR
B. VR
C. AV
D. MR
58. Which one of the following is **Not** the main blocks of Augmented Reality Systems (ARS)?
- A. Infrastructure Tracker Unit.
B. Processing Unit.
C. Visual Unit.
D. Head-Mounted Display
59. Access computing and communication resources only when authorized or when compelled by the public good is _____.
- A. Basic Ethics principle
B. General ethical principle
C. Professional responsibility
D. Professional Leadership Principles
60. _____ sensors of IoT devices deal with the physical position and location of the device
- A. Position sensors
B. Environmental Sensors
C. Motion sensors
D. Global Positioning System
61. AR in the theater can be
- A. Augmented reality can serve not only for entertainment purposes but also for the purposes of accessibility.
B. The possibility to overlay virtual objects over the real environment can be used, for example, for subtitling in various theater shows.
C. Now, many theaters use LED displays either to provide subtitles for translation or to assist hearing-impaired visitors.
D. All
62. Which one of the following is **Not** Professional Leadership Principles?
- A. Ensure that the public good is the central concern during all professional computing work.
B. Articulate, apply, and support policies and processes that reflect the principles of the Code
C. Manage personnel and resources to enhance the quality of working life.
D. Recognize and take special care of systems that become integrated into the infrastructure of society.
E. Design and implement systems that are robustly and usably secure
63. _____ is the protection of personally identifiable or business identifiable information that is collected from respondents through information collection activities or from other sources.
- A. Digital Privacy
B. Information Privacy,
C. Communication Privacy
D. Individual Privacy
64. A right to exist freely on the internet is _____?
- A. Digital Privacy
B. Information Privacy,
C. Communication Privacy
D. Individual Privacy

65. If communications can be intercepted or delivered to other recipients without the sender's knowledge and privacy is _____?
- A. Digital Privacy
 - B. Information Privacy,
 - C. Communication Privacy
 - D. Individual Privacy
66. Which one of the following is **Not** a digital Privacy Principles?
- A. Data Maximization
 - B. Transparency
 - C. Accuracy
 - D. Security
67. Which one of the following is impact of emerging technology?
- A. Counter-terrorism and law enforcement informatics
 - B. Real-time horizon scanning and data mining
 - C. Automated cybersecurity and information assurance
 - D. Simulation and augmented reality technologies for training and modeling
 - E. Safety and security equipment made with lighter and stronger materials.
 - F. Advanced forensics enabled by enhanced computing capabilities.
 - G. All
68. _____ assured identity security screening solutions by bio-signature.
- A. Robotic Policing
 - B. Biometrics
 - C. Advanced forensics
 - D. Situational awareness capabilities
69. Which one of the following is Challenges in using AI?
- A. Humans could be the weak link
 - B. Potential to replace human workers.
 - C. Replace experts in higher-level jobs.
 - D. All
70. Which one of the following is the Risks of Emerging Technology?
- A. Driverless car
 - B. Wearables
 - C. Drones
 - D. Internet of things
 - E. All
71. _____ is particularly important for the accountancy profession, with a code for professional ethics based on five basic principles.
- A. Basic ethics principles
 - B. General ethical principles
 - C. Professional responsibilities
 - D. Professional leadership principles
72. _____ Notice covering the purpose of the collection and use of identifiable information will be provided in a clear manner.
- A. Transparency
 - B. Security
 - C. Accuracy
 - D. Data Minimization
73. _____ capabilities via GPS for disaster response and crisis response scenarios
- A. Biometrics
 - B. Situational awareness
 - C. Safety and security equipment
 - D. Counter-terrorism

Part II: - Short Answer

1. List at least four advantage and disadvantage of IoT and explain each.
2. List all the major components of IoT architecture and explain each.
3. List at least five challenges of IoT and explain each.
4. Write the general benefits of AR provides to patients and healthcare workers.
5. List at least five advantage of IoT and explain each.
6. Explain how IoT can work.
7. List and explain the three Type of Interaction in IoT
8. List at least four IoT platform and give Key features of each
9. List at least four Application of AR in Medicine and explain each.
10. What is the difference between Video See-Through and optical See-Through?
11. List and describe the challenges of robotics, big data and IoT emerging technology.
12. What is the difference between AR, VR and MR? briefly explain each.
13. What is IoT, AR and Ethics and professionalism? Briefly explain each
14. List at least three application of AR in the education.
15. List at least three application of AR in the medicine.
16. What is Accountability and trust in the emerging technology?
17. What is the importance of ethics in emerging technologies?
18. Briefly explain digital privacy principles
19. What is digital privacy? What is its importance?
20. What is the benefit of augmented, virtual and mixed reality?
21. List the three categories of sensor and briefly explain each with example.

