1. What is an information system?
2. What does the information system do?
3. What is DIKW?
4. What are the organizational dimensions of an information system?
5. What are parts of the information system?
6. What do they do?
7. What is the organisation impact of IS?
8. What is the societal impact of IS?
9. What are the success factors when implementing IS?
10. What is an ebusiness and ebusiness application?
11. What is a business process?
12. What does the ERP system do?
13. What are the three main business processes supported by the ERP system?
14. Explain SaaS ERP implementation, benefits and disadvantages ?
15. What are the benefits and limitations of the ERP system?
16. What is the EAI system and what is its function?
17. What is CRM?
18. What is the CRM process?
19. What are the system components of CRM?
20. What are tools of Operational CRM?
21. What is supply chain?
22. What are the components of CRM?
23. What are the flows of supply chain?
24. What causes inefficiencies in a supply chain?
25. Type of supply chain model?

26. What is the components of SCM?

27. What is competitive strategy

28. What is competitive advantage

29. What is sustainable advantage

30. What is done in strategic management model?

31. What is in porters five forces model?

32. What is intense forces and benign forces?

33. What is internal scanning or organizational analysis?

34. What is a resource based view?

35. What is VRIO?

36. What is value chain?

37. What is strategy formulation

38. What is a business strategy?

39. What are porter's generic competitive strategies?

40. What is cloud computing

41. What are the characteristics of cloud computing?

    Self service, on demand metered billing resource pooling resource elasticity reliability

42. What is virtualization?

43. What is the difference in type 1 and type 2 hypervisor?

44. What are the cloud computing service models?

45. What is hybrid cloud?

46. What benefits does flat topology have in data centers?

47. What is fog computing?

48. What are the limitations of fog computing?
49. How is Bluetooth used in businesses?
50. How does barcode work?
51. How does qr code work?
52. How does RFID work?
53. What is mobile computing?
54. How does mobile marketing use data?
55. What is geo-fencing and geo conquesting?
56. What are the decision characteristics for the decision support framework?
57. What is the decision making process and how does the management information system support the process?
58. What is knowledge and knowledge management?
59. How is the knowledge shared?
60. What are the types of knowledge management systems?
61. What is KPMG?
62. What tools are used in intelligent techniques and what is the purpose?
63. What are expert systems?
64. What is case-based reasoning?
65. What is a fuzzy logic system?
66. What is intelligent agent
67. Why do managers need IT support in decision making?
68. What is business intelligence and analytics?
69. List the low level to high level descriptive analytics.
70. What is ETL?
71. What is datamining?
72. What are the techniques of data mining?

73. What analysis does DSS have?

74. Why is security important for information systems?

75. Internet security challenges?

76. What is malware and what malwares are there?

77. What methods are used to crack passwords?

78. What is click fraud?

79. What is risk analysis?

80. What is risk mitigation?

81. What is control evaluation?

82. What communication controls are there?

83. What is a digital certificate?

84. What is digital signature?

85. What is VPN?

86. What are the strategies for business continuation?

87. How is auditing executed?

88. What are the factors that cause IT changes to fail?

89. What are the dimensions of business investment?

90. How should businesses invest?

91. What is the structure of SDLC?

92. What is done in each process?

93. What other tools are used?

1. It is a set of interrelated components that can collect, process, store and distribute information to support decision making, coordination and control
2. takes in an input which is raw data, convert to something useful, and outputs it to people
3. data, information, knowledge, wisdom
4. senior management, middle management (knowledge worker), operational management (data workers, production or service workers), separation of business functions and processes, business cultures, organizational politics
5. Transaction processing system, management information system, decision support system, executive support system
6. TPS records transaction and allow managers to monitor operations, MIS have a little analysis capability and provides report on performance, dss supports non routine decision making (eg what are the impacts in production if sales are doubled) and uses data from mis, tps and external sources, Ess aids senior executives by providing data from tps and mis with data from external events such as new tax laws.
7. For managers, reduce the number of middle managers and provide real time or near real time data, ability to manage geographically dispersed employers. For non managers, eliminate job, job stress, loss of identity.
8. Create job opportunities for the disabled, flexibility in work, improvement in healthcare. However it creates health problems, place employees on constant calls, misinform patient about health problem
9. Adopting the right business model, investing in complementary assets (such as upskilling workers)
10. Ebusiness is the integration of business process, strategy and technology and its application are those that enables and manage relationship with external applications
11. flow of material, knowledge, information and sets of activities
12. designed to correct the lack of communication among MIS and consolidate information from all activities
13. procurement process, production process, order fulfillment process
14. SaaS ERP uses software as a system to acquire cloud based erp systems and vendors offer the products over the internet and is responsible for updates, security and availability. advantages are that it can be used anywhere, avoid initial hardware and software investment, solution scalable,. Disadvantages are its security, reliability, and loss of control over strategic IT resources

15. Organizational flexibility and agility, decision support, quality and efficiency. Limitations processes in software is usually predefined by ERP vendor and which is a problem for large firms with established procedures and the cost and risk of failure is high

16. enterprise application integration system integrates existing systems by providing layers of software to connect applications together, supports implementation of erp solutions by connecting modules from different vendors. its functions are data integration, communication between systems and access to system interface where all information, business policies and rules are kept consistent

17. Customer relationship management system manages the relationship of the business and the customer. It captures and consolidates customer data and distribute customer information to various system and customer touch points across the enterprise

18. CRM process begins with customer acquisition. some customers will purchase which makes them customers and some customers will become repeat customers. The organization then segments the repeated customers into low value and high value. but overtime the organization will inevitably lose some of its customers. the goal of the crm is to maximize repeat customers and reducing customer loss

19. Operational CRM which is customer facing, analytical CRM system which analyzes customer behavior and perceptions, collaborative CRM that integrates communication between the organization and the customer.

20. Sales force automation, marketing automation, call center and customer service support, chatbot, ondemand crm, social crm

21. Flow of material, information, money and services

22. Upstream, internal and downstream. Upstream is where procurement of raw material, internal is where assembly happens and downstream is distribution

23. Material flow, information flow and financial flow

24. Uncertainties and untimely information

25. Push based models predict what customers want while pull based models produce to order. Make what we sell and not sell what we make

26. Supply chain planning, supply chain execution and supply chain visibility and analytics

27. It is about choosing a different position to deliver unique value

28. It is about an advantage over competitors gained by providing consumers greater value

29. It is when barriers exist that make it difficult for competitors to imitate or for customer to switch

30. Environmental scanning/ strategic analysis, strategy formulation, strategy implementation , evaluation and control

31. threat of entry which is how difficult it is for firms to enter the industry, the harder it is, the more likely existing firms will continue. Bargaining power of supplier, as companies depend on the range of supplier, supplier is more powerful if it is less saturated, serve in many industries, technological lock in, product differentiation, forward integration (supplier control more than one stage of the supply chain). Bargaining power of buyer which means company is dependent on customer for business, customer is more powerful if products are common, few buyers or large volume buyers. Threat of substitution means a substitute that performs the same or similar function, and threat is high if attractive price- performance. Rivalry among competitors, where firms feel pressure or opportunity to enhance their existing market position.

32. It means if competition is strong and weak respectively

33. It is the identifying, developing and taking advantage of an organization's resource and capabilities

34. It is a model that sees resources as key to superior firm performance. if a resource exhibits VRIO attributes, it will enable the firm to gain and sustain competitive advantage.

35. VRIO stands for valuable, rare, costly to imitate, organized to capture value

36. It begins with raw material moving on to a series of value added activities and ending with distributors to consumers

37. Developing a strategy that fits between external and internal strategic factors such as business and corporate strategy

38. Focus on improving the competitive position of a company's product or services which can be competitive or cooperative

39. Cost leadership strategy which sets up to be the low cost producer in the industry, differentiation strategy which firms seek to be unique in its industry (apple nike), focus strategy which tailors its strategy to a specific market segment

40. It is a set of technical concepts that allow data, application and services that are running on several computers which is geographically dispersed to be interconnected through real time communication network

41. Self-service and on-demand, metered billing, broad network access, resource pooling, rapid elasticity, reliability

42. Technology that allows us to create virtual versions of hardware and software that operate in isolated environment

43. Type 1 hypervisor sits in between hardware and os and type 2 hypervisor sits between os and software

44. Enterprise it, IAAS, PAAS, SAAS

45. It is a cloud computing environment in which a company provides and manages some of the resources in house that is on a private cloud behind its firewall and other services are provided externally such as hosted on a public cloud

46. It is easier to move service, data, application from one part to another as it will not need to go through multiple layers

47. As there is a lot of data generated from IOT devices, the data will be first processed at the edge of the network where processed data will then be sent to the data center for storage or further processing. This is done to reduce bandwidth usage, provide better security and improve scalability.

48. As there is a large number of edge devices that are distributed around the area, there is a chance where some devices might be left out and not updated, it will be more vulnerable to attack

49. It can be used to track customers accurately in store and when they leave, the payment will go through and customers do not need to take out their phones or cards.

50. Scanner will scan the barcode and the areas that reflect back will tell the scanner which are the ones and zeroes. Requires line of sight between scanner and code, cannot write data back, short range and stores little information.

51. QR code encodes more information and uses black and white dots to represent one and zero and the 3 squares provide a reference point for the scanner to scan and the light reflected back tells the scanner what is the zero and one. Requires line of sight between scanner and code, cannot write data back, short range and stores little information.

52. The tag acts like a transponder and has a chip inside. The reader will send electromagnetic waves that will activate the tag. The tag can contain a lot more information and can be written into.

53. It is the real time connection between a mobile device and another computing environment. It has two characteristics and it is mobility and broad reach. It creates five other attributes which are ubiquity, convenience, personalization, location

54. Using location and time data, it will send user advertisements customized for that timing and location. Like at 1pm, it is more likely users will be more interested in coffee than beer discount. Or location data and weather data where users will prefer delivery on a rainy day as compared to instore discount.

55. Geofencing is to create a virtual boundary where it sends advertisement to users that enters the range and geo conquesting is to create a virtual boundary on competitor

where they get close to example pizzahut, they will get an advertisement about dominos to lure customers away from competitor

56. Senior management is unstructured, middle management is semi structured and operational management is structured.

57. Intelligence which is problem discovery, design which is solution discovery, choice which is choosing solutions and implementation which is solution testing. MIS can provide vast amounts of information about the operations and the performance of the organization helping with the identification of the problems. DSS can help to explore different alternatives as it has many analytical tools. DSS also helps to choose and compare options and alternatives. Information from MIS will then prove that the problem has been addressed.

58. Knowledge is an intangible asset that is created from data and information that can be explicit or tacit. Knowledge management is a set of business processes to create, store, transfer and apply knowledge. Knowledge can be unstructured or semi structured.

59. Traditionally, it is shared through email, instant messaging or serge engine to locate the knowledge but modern organization creates wiki within the organization, social network to create a fancy platform for knowledge sharing or training. THe knowledge needs to be built into the process if not it will become useless

60. Enterprise wide knowledge management system which is a firm wide platform for the whole organization. Knowledge work systems to support workers that discover new knowledge like scientists. Intelligent techniques which are tools to create knowledge and find patterns and correlation between data.

61. KPMG is enterprise wide management system that stores and organizes the data into segments and categories

62. To capture tacit knowledge, expert systems, case based reasoning and fuzzy logic is used. For knowledge discovery, neural networks and data mining is used. Generating solutions to complex problems, genetic algorithms are used. Automating tasks, intelligent agents is used

63. It is a computer system that emulates decision making of a human expert through setting of rules such as if else statements. But they cannot make decisions when there is a specific rule that does not apply and if certain knowledge is wrong, it will cause misinformation. Forward chaining of the inference method starts with available data and applies inference rules to extract more data until a conclusion is reached. Backward chaining inference method starts with a goal and works backwards to see if the data supports it.

64. Past experiences will be summarized and documented. When the user has a new problem, they will look for similar cases to apply the solution of the old case to the new

case. If it works, add the new case to strengthen the repository. If it does not, add comment on why it did not work

65. It is a system that uses linguistic categories such as warm, tired, with a range of values to represent more flexible rules

66. It is a type of software that has some logic and sensors to perceive the change in values or the environment to make decisions. Agents can learn, collaborate with other agents to improve their knowledge. An example is that an agent can be stationed in a truck to let it dispatch once its fully loaded or when the stock level in the retail store runs low, the agent can make a decision to send a half loaded truck if the retail store will lose more when it runs out of stock.

67. There are a lot of alternatives to consider and needs to be made quickly. With the use of statistics, AI and neural networks, they can compare performances, to identify best solutions.

68. An approach to integrate, analyze and visualize data to solve business problems

69. Descriptive analytics (what has happened), diagnostic analytics (why has it happened to diagnosed the problem), predictive analytics (to predict what will happen in the future) and prescriptive analytics (how to get to this point)

70. ETL is extraction, transformation and load which is a process done to store knowledge into the data warehouse or data mart. Data Mart is a smaller version of the warehouse to represent a specific portion of the big data warehouse

71. It is the process of searching for valuable business information in a large database, data warehouse, or data mart to identify patterns and predicting the trends and behavior

72. Classification is to assign items to predefined classes. Clustering is the grouping of items of similar attributes. Estimation uses neural networks and thorough data inputs with set outputs, it can slowly estimate how decisions are made and when it is deployed, it can make similar estimated outcomes. Association discovery which finds correlations among items like what items are usually bought together. Text mining to mine unstructured text to develop meaningful insights, used to analyze text in email to see if it is a spam, customer comments to see if they are happy but the limitation is that users can be sarcastic. Web mining which is used to analyze content data in the website and also the web structure

73. DSS is a BI application that combines models and data to solve semi-structured and unstructured problems. Sensitivity analysis studies the impact of change in one or more parts to other parts of the model. What if analysis predicts the impact of a change in the assumption on the solution, like what if the price increases by a dollar, what will happen. Goal seeking analysis is to calculate the value of the input to achieve a desired output

74. As technology evolves, there is more data stored digitally. There will also be more intelligent devices that can be weak links. Hackers also need not be capable anymore as there are tools that can be used these days

75. It is open to anyone and because the internet is big, means there is a wide impact. If it becomes a part of a corporate network, it will become more vulnerable. Wifi uses radio frequency bands which are easy to scan and it uses SSID (service set identifiers). Hackers can create rogue access points to capture information from employees when they connect to it as well as use sniffer programs to pick up broadcasts between access points and legitimate users as there are multiple broadcasts.

76. Malware penetrates the organization information system to disrupt business or steal information. Worms replicate and spread themselves without requiring other computer programs to slow down the machine and the network the machine is connected to. Trojan horse hides itself and relies on tricking users to open it, and it opens a backdoor for hackers to take control of machines or delete files. Botnet which uses zombie PCs which are PCs that are infected by worms or trojan horses to spam other users or launch a DDOS attack. Phishing which is attempting to trick people into giving up their personal information by pretending to be someone they know.

77. Brute force attacks and dictionary attack

78. When an individual or computer clicks an online ad without any intentions of learning more about the advertiser or making a purchase online.

79. Risk analysis accesses value of asset, estimating the probability each asset will be compromised and comparing costs

80. Risk mitigation has 4 sections, risk defense which prevents exploitation. Risk transference which transfers the risk by using other means like insurance. Risk limitation is to implement controls that reduce the impact of the threats. Risk acceptance which accepts the risk and continues operating with no controls and absorbs any damages.

81. Control evaluation to examine the cost effectiveness of the defense. Defense in depth is to employ multiple layers which includes preventive control, detective control and corrective control. Time-based model of security which uses time to evaluate effectiveness. P(t), D(t) and C(t). if preventive time is more than detective time and corrective time then it is effective.

82. Antivirus software that attempts to identify and eliminate worms, viruses and other malicious software but it can also bring harm like putting genuine emails into spam. Firewall, which is a system that prevents information from moving between untrusted networks and private networks by detecting suspicious traffic.

83. It is issued by a certificate authority that has user's public key information

84. It is a signature that is encrypted using the user's private key and can only be decrypted by using its public key.

85. It is a private network that uses a public network to securely connect users by using encryption. It uses tunneling which is a process that encrypts each data to be sent and places it in another packet.

86. Hot, warm, cold sites. Where cold sites have the rudimentary equipment and hot sites have data backup and such.

87. Around the computer which uses specific inputs to generate specific output to see if the control works as planned, through the computer means checking the logic using inputs and outputs. Auditing with the computer will simulate an attack using livedata to see how the system will perform

88. Path dependence where IT investment is limited by the one that is made in the past. Time lagged effect where the profit from IT investment takes quite long to fulfill and a lot of IT investments cannot be easily measured by financial measures. Institutional information asymmetry where managers imitate the it investment of other organizations which has harmful implications like drawing more attention to the research and create more competition

89. Infrastructure investment which is the shared IT services such as hardware, software, IT personnel. It brings lower short term profitability but higher operation performance in the long run. Transactional investment which is used to improve transaction systems like to automate processes for different transactions or to increase volume of business to support more transactions. It brings immediate costs reduction but not with more firm level product innovation. Informational investment which focuses on providing information, information flow, management and sharing across the organization. It bringe cost reduction and identification of new opportunities for revenue. Strategic investment allows companies to reposition themself in the industry which enables the business to enter a new market or development of new products.

90. Firms with cost leadership strategies should invest towards transactional IT systems to cut costs and firms pursuing innovation strategies should invest more in strategic IT systems.

91. It is system investigation, system analysis, system design, system implementation, system maintenance

92. In the investigation phase, it is to see if it can be done. During the analysis phase, we need to include system requirements, function requirements, platform support etc and will use joint application design to collect requirements. System design is how the system will resolve the business problem and then they will need to be approved. Systems implementation is about transforming the system design into a working information system, documentation and training. It also involves system conversion where it can be done in parallel where old and new systems are used at the same time,

direct where the it is swap directly to the new one, phased where parts of the new system is implemented overtime, pilot where the system is rolled out to one part of the organization before rolling out to the entire organization to ensure that errors and mistakes are identified and fixed. System maintenance to monitor whether the system meets the organization needs and operation till it phases out

93. JAD, prototyping and computer aided software engineering, agile, end-user development, rapid application development