**DV162\_45\_PAS On Computer Power**

**Possible Answers Sheet**

Q1. Why should you disconnect from the power source when working on a computer? Ans: To Save ourselves from getting shocked and it is non-negotiable best practice.

Q2. What is a challenge you might have when working on electronic components?

Ans: Some components will have capacitors that will store power. So even when we are unplugged from the power source, those devices could still shock us.

Q3. What should you never do when working with an electrical system?

Ans: Never connect any part of your body to any part of the electrical system.

Q4. What type of power does a computer motherboard and components commonly use?

Ans: DC (Direct Current) to provide Power or DC Power.

Q5. Power sources are receiving\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the power outlet.

Ans. Alternating Current or AC Power.

Q6. How would you get the conversion betweenAC & DC?

Ans. One way we would do that is through the power supply of our computer, which converts that input of AC power to provide an output of DC power.

Q7. What are the common voltages provided by power supplies?

Ans: Very common for the power supplies to provide 3.3V volts, 5 volts, and 12 volts of DC power.

Q8. One measurement that we use with power is an \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Ans. ampere or Amp.

Q9. What does an ampere measure?

Ans: An ampere measure the current.

Q10. What is voltage?

Ans: Voltage is how much force is pushing the charge/electron from the wire or circuit is called voltage.

Q11. What is a watt?

Ans: watt is the unit of power, which is the product of current and voltage.

Q12. How would you calculate the number of watt used?

Ans. By taking the product of voltage used and current used.

Q13. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the type of power that we are receiving from the outlet that’s in the wall.

Ans. Alternating Current or AC

Q14. Why do we commonly distribute power using alternating current?

Ans. Because of Alternating Current Efficiency for long distance and taking advantage of transformers as transformers only work with AC.

Q15. What is the power of alternating current in the US and Canada?

Ans: The alternating voltage in US and Canada are 110V to 120V and frequency is 60Hz.

Q16. What is the frequency of alternating current in Europe?

Ans: 50Hz.

Q17.We often refer to the number of times this current alternates as a total number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Ans. cycles or hertz.

Q18. If alternating current is going into our power supply, then\_\_\_\_\_\_\_\_\_\_\_\_\_\_, is what is coming out of our power supply and onto the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Ans. Direct Current, motherboard.

Q19. What is the voltage and frequency for a power supply in the US?

Ans: 110V to 120V and 60Hz.

Q20. What is the voltage and frequency for a power supply in Europe?

Ans: 220V and 50Hz.

Q21. What should be done if a computer is moved from one country to another?

Ans: We have to be sure that the power supply is able to support the changes in voltage if there is any change there.

Q22. How can you determine the voltage of a wall outlet?

Ans: By using a Multimeter.

Q23. What should you be careful of when using a manually switched power supply?

Ans: We would never want to plug in a manually switched 120 volt power supply into a 230 volt power source, or we are going to see sparks and a lot of smoke come from that power supply.

Q24. What is the purpose of the switch on the back of the power supply?

Ans: To shift the input voltage of the power supply as US standard voltage or UK Standard Voltage.

Q25. What is the power supply used for?

Ans: Is used to convert AC to DC as a computer system requires DC.

Q26. What is direct voltage?

Ans: Those voltages which do not alter with time. Or Those voltages that are associated with alternating current.

Q27. What is a characteristic of direct voltage?

Ans: Characteristic of this direct voltage is that we specify it as either a positive value or a negative value.

Q28. What components typically require higher voltages?

Ans: PCI Express adapters, hard drive motors, or fans typically required higher voltage i.e 12 Volt.

Q29. What voltage is usually used for modern motherboards?

Ans: 3.3 Volts.

Q30. What components take advantage of the 3.3 volts on modern motherboards?

Ans: M.2 Slots and some RAM Slots.

Q31. What is the Standby voltage used for?

Ans: SB voltage used by the system in Hibernate mode, SB constantly checking if we are going to Push the power button to bring the system back to life.

Q32. What type of components use negative 12 volts?

Ans. Local Area Networks and some of the older serial ports use negative 12 volts.

Q33. Are modern motherboards designed to use minus 5 volts?

Ans. No, modern motherboards are not designed to use minus 5 volts

Q34. Does the power supply support the 120 volts used in the US?

Ans. Yes, the power supply supports the 120 volts used in the US.

Q35. If you add up all of the DC voltage that’s supported by this power supply, it can support a total of \_\_\_\_\_\_\_\_\_\_.

Ans. 850 Watts.

Q36. We get power from the power supply to the motherboard through this very large \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Ans. 24 pin connector.

Q37. What type of connector is used in modern systems?

Ans: 24-pins connector is used in modern systems.

Q38. How do you connect the power connector to the motherboard?

Ans: We connect the power from the power supply directly to the connector to the motherboard.

Q39. What type of computers likely have a single power supply?

Ans: Computers at home likely have a single power supply.

Q40. What type of devices may have multiple power supplies?

Ans: Systems at the data center may have multiple power supplies.

Q41. How is the load shared between multiple power supplies?

Ans: The equal load is shared between multiple power supplies.

Q42. How do you remove a power supply from a server?

Ans: We do hot-swappable, there’s a clip right on the top of this when we push down. And we can slide out the entire power supply and simply replace it with a new one without powering down the server.

Q43. What type of connectors are typically found on the side of a power supply that goes to the motherboard?

Ans: There may be a fixed set of connectors that not only include your motherboard power but also power for all of the other components on your system as well.

Q44. What is a modular power supply?

Ans: Modular power supplies are those, which have connectors available to connect required wires instead of fixed wires for coming out from it.

Q45. How do you balance the maximum capacity of a power supply?

Ans: Balancing the maximum capacity of a power supply typically refers to distributing the power draw of your devices across the available outputs of the power supply to avoid overloading it. So we have to use double power or wattage power supply required for the system.

Q46. Does having additional capacity in your power supply change the overall speed or efficiency of your computer?

Ans: No, having additional capacity in your power supply does not change the overall speed or efficiency of your computer.

Q47. Can you purchase a power supply from any manufacturer?

Ans: Yes, we can purchase a power supply from any manufacturer as sizes are very standardized.

Q48. What is the physical size of power supplies?

Ans: Size of power supplies are very standardized.

Q49. What is needed to determine the proper size for a power supply for a system?

Ans: We need to perform some calculations to determine the proper size for a power supply for the system. Like, By determining the wattage we would need for all of the components inside of our system, including the CPU, storage devices, video cards, and anything else inside of our computer case.

Q50. How do I calculate the wattage needed for my system?

Ans: We first needed to determining the wattage we would need for all of the components inside of our system, including the CPU, storage devices, video cards, and anything else inside of our computer case, and then use the rule of thumb to take the wattage that we’ve calculated and double that number.