

Department of Biotechnology
Guru Ghasidas Vishwavidyalaya, Bilaspur (CG)
End semester examination (2013-2014)
LBTC: 502 Basic Biostatistics and Computer Skills B.Sc. V Semester

Answer 1:- Multiple Choice Answers

1. Calculate the mean of the following marks of the student
59, 65, 71, 67, 61, 63, 69, 73
Answer: 66
2. Which of the following is not true about median
Answer: It cannot be located graphically
3. It is the total number of all the possible outcomes of an experiments
Answer: Exhaustive event
4. What is the probability of getting an even number in a single throw with a dice
Answer: 1/2
5. Which one the following is not an output device
Answer: Mouse
6. A computer assisted method for the recording and analyzing of existing or hypothetical systems is
Answer: Data flow
7. The binary system uses powers of
Answer: 2
8. BCD stands for _____
Answer: Binary Coded Decimal
9. Which of the following is not a font style?
Answer: Superscript
- 10 Portrait and Landscape are
Answer: Page Orientation

Answer: 2

Mean:- Sum of observation divided by total number of observation.

Merits:- Easily to understand and calculate, based on all observation, defined by mathematical observation and average obtained by calculation etc.

Demerits:- It is theoretical, greatly affected by extreme values, cannot calculate qualitative data.

Use formulae for calculation of mean by step deviation method is

Arithmetic mean=
$$\bar{X} = A + \frac{\sum fd}{f}$$

Take 5 as assumed mean (or student choice)

Then $\Sigma f = 1050$, $A = 5$ and $\Sigma fd = 12$

Put values in formulae and arithmetic mean will be 5.0114

Answer 3:

a. Properties of normal distribution

1. The curve is Bell –shaped,
 - a. It is symmetrical (Non-skew). That is $\beta_1 = 0$
 - b. The mean, media and mode are equal
2. The curve is asymptotic to the X-axis. That is, the curve touches the X-axis only at $-\infty$ and $+\infty$.
3. The curve has points of inflexion at $\mu - \sigma$ and $\mu + \sigma$.
4. For the distribution**a.** Standard deviation = σ , **b.** Quartile deviation = $2/3 \sigma$ (approximately) **c.** Mean deviation = $4/5 \sigma$ (approximately)
5. For the distribution –a. The odd order moments are equal to zero.
6. The distribution is mesokurtic. That is, $\beta_2 = 3$.
7. Total area under the curve is unity.

b. Properties of correlation coefficient

1. It is a measure of the closeness of a fit in relative sense.
2. Correlation coefficient lies between -1 and +1
3. The correlation is perfect and positive if $r=1$ and it is perfect and negative if $r=-1$
4. If $r=0$, then there is no correlation between the two variables and thus the variables are said to be independent.

c. Skewness and kurtosis

Skewness is lack of symmetry. Two type of skewness 1. **Positive** in which distribution curve have longer tail towards right 2. **Negative** in which distribution curve have longer tail towards left. Skewness shows us departure from symmetry. Skewness is not an average but is measured by the use of mean, median and mode. It is find out the nature and degree of concentration if items of the distribution. **(Explain)**

Kurtosis: - It is the degree of peakedness of the hump of the distribution. Karl Pearson called it a “Measures of Convexity” of the curve. There are three types of kurtosis 1. Normal curve or mesokurtic:- The curve which is neither flat or peaked. 2. Leptokurtic:- A curve which is more peaked than normal curve. 3. Platykurtic:- A Curve which is flatter then normal curve. **(Explain)**

Answer 4: “Generation of computer”

First Generation:- The period of first generation : 1946-1959. Vaccum tube based.

Second Generation:- The period of second generation : 1959-1965. Transistor based.

Third Generation:- The period of third generation : 1965-1971. Integrated Circuit based.

Fourth Generation:- The period of fourth generation : 1971-1980. VLSI microprocessor based.

Fifth Generation:- The period of fifth generation : 1980-onwards.ULSI microprocessor based. **(Explain)**

Answer 5: (Explain)**a. Hardware**

Hardware are required to store and execute the software. Hardware serves as the delivery system for software solutions. Type: - Input, storage, processing, control, and output devices. The hardware of a computer is infrequently changed. Hardware failure is random. Hardware does have increasing failure at the last stage. Hardware wears out over time. Hardware is physical in nature. Examples: CD-ROM, monitor, printer etc

b. Software

Software is collection of instructions that enables a user to interact with the computer and allow computer to perform a specific task. Type: - System software, Programming software, and Application software. Software failure is systematic. Software does not have an increasing failure rate. Software does not wear out over time. Software is logical in nature. Example:- Quickbooks, Adobe Acrobat, Microsoft Word and Microsoft Excel etc.

c. LAN

LANs connect computers and peripheral devices in a limited physical area, such as a business, office, laboratory or college campus by means of permanent links (wires) that transmit data rapidly. LAN consists of two or more personal computer, printers and high capacity disk storage device called file servers, which enable each computer on the network to access a common of files. Characteristics of LAN includes easily resource sharing, Data transfer rate are high, Small area covered by LAN, Cost of setting up the network is usually low

d. RAM

Random access memory (RAM) is considered "random access" because you can access any memory cell directly if you know the row and column that intersect at that cell. RAM is normally used in computer systems for main memory or primary storage. Modern operating systems run primarily in RAM, and as they load and run additional applications, they move these programs and their data into RAM for faster processing. RAM can be categorized as volatile or non-volatile. Volatile means that all data is lost when the chip is powered down. Non-volatile memory retains data even when not powered.

e. Operating system

An Operating system is a program that controls the execution of application programs and acts as an interface between the user of a computer and the computer hardware. Function of operating system includes convenience, efficiency and ability to evolve for new development. Common service provided by the operating system program execution, I/O operation, file system manipulation, communications and error detection.

Answer 6:**A. MS-Word**

Microsoft Word is a word processor developed by Microsoft. Microsoft Word is the word processing component of the Microsoft Office Suite. It is used primarily to enter, edit, format, save, retrieve and print documents. Components in Microsoft word are The Title Bar, The Ribbon Menu System, The File Menu, Quick Access Toolbar, The Home Tab, The Ruler etc.
(Explain)

B. Excel worksheet and steps to prepare pie graph

Microsoft Excel is an example of a program called a “spreadsheet.” Spreadsheets are used to organize real world data, such as a check register or a rolodex. Data can be numerical or alphanumeric (involving letters or numbers). By using spreadsheet program you can make changes easily, including correcting spelling or values, adding, deleting, formatting, and relocating data. Also can perform certain functions automatically (such as addition and subtraction), and a spreadsheet can hold almost limitless amounts of data. Microsoft Excel program may look slightly different depending on the version. There are other spreadsheet programs available, including Google Spreadsheets (part of Google Docs), OpenOffice Calc, Apple iWorks Numbers, Lotus 1-2-3, and WordPerfect Quattro. Features of Microsoft Excel are The Title Bar, The Ribbon Menu System, The File Menu, Quick Access Toolbar, The Home Tab, Equation Editor, Formatting Cells, Multiple Sheets, Cutting, Copying, and Pasting Data, Filling Data across Columns and Rows

Steps to prepare pie chart

Select the data that you want to include in the chart. To create a chart or graph, select the **Insert** tab from the Ribbon Menu bar. In the middle of this new menu, you will see a “**Charts**” box. Choose pie chart and pie chart will appear on the screen.

Answer 7: “Types of graph”

The representation of quantitative data through charts and diagrams is known as Graphical data. Graphs include both charts and diagram.

Types of graphs include Line charts, Bar chart, Pie chart, Pictograph, Histogram, Frequency Polygon. (**Explain**)

Answer 8: Involvement of peripheral devices

A peripheral device is an internal or external device that connects directly to a computer but does not contribute to the computer's primary function, such as computing. It helps end users access and uses the functionalities of a computer. A peripheral device provides input/output (I/O) functions for a computer and serves as an auxiliary computer device without computing-intensive functionality. Peripheral devices connect with a computer through several I/O interfaces, such as communications (COM), Universal Serial Bus (USB) and serial ports.

Peripheral devices include the following: Mouse, Keyboard, Printer, Webcam, Printer, Scanner, External drives, Graphics cards and CD- Rom etc. (**Explain**)