Ajay Kumar Garg Engineering College, Ghaziabad

Department of MCA

Solution Sessional Test-2

Course:	MCA	Semester:	1
Session:	2017-18	Section:	MCA-1
Subject:	CCPP	Sub Code:	RCA-101
Max Marks:	50	Time:	2 hour

Section - A

Q1. what are modern computing models?

Soln cloud computing, Grid computing, Green Computing, IOT etc.

Q2. List 4 functions of an OS.

Soln. Process management, file management, memory management, I/O management.

Q3. Write an algorithm to calculate area of circle.

Soln. Start

Input the value of Radius R

Let PI = 3.14

Calculate area = PI * R * R

Display area

Q4. What is meant by E-waste?

Soln. e-waste describes discarded electrical or electronics devices.

Q5. Write a program to display your name in python programming language.

Soln:

```
>>> a= "Name"
>>> print a
```

Section - B

Q 6. Why Green computing is required ? Explain.

Soln In the modern era, the use and need for computers are growing with each passing second. Moreover, thousands of computing devices are manufactured every day and the same amount of old computers is being thrown away piling up the e-wastes. So it is highly important to manage these computing devices in such a way that they last longer and even if they are disposed of, they should'nt cause much harm to the nature!

Green Computing can take many forms in itself.

↳ This is more of a supplementary activity that is needed to be carried out along with other go green methodologies.

↳ Green disposal refers to proper disposal of the e-wastes.

Q 7. What is Internet of Things (IoT)? How IoT is a network of networks ? Explain.

Soln The internet of things (IoT) can be described as objects around us being connected in order to provide seamless communication and contextual services. In IoT any physical thing can become connected to other things, using and widening the scope of the internet. IoT is a fabric of numerous connections between things and between humans

and is thus potentially more complex and dynamic than the internet. The internet is already the most complex artefact man has made, IoT goes beyond that. Moreover IOT ~~adapts~~ alters the mode of interaction of humans with things, devices artefacts and natural objects.

IoT is a world in which all electronic devices are networked and every object, whether it is "physical or electronic, is electronically tagged with information pertinent to that object."

↳ IoT is made up of a loose collection of disparate, purpose-built networks.

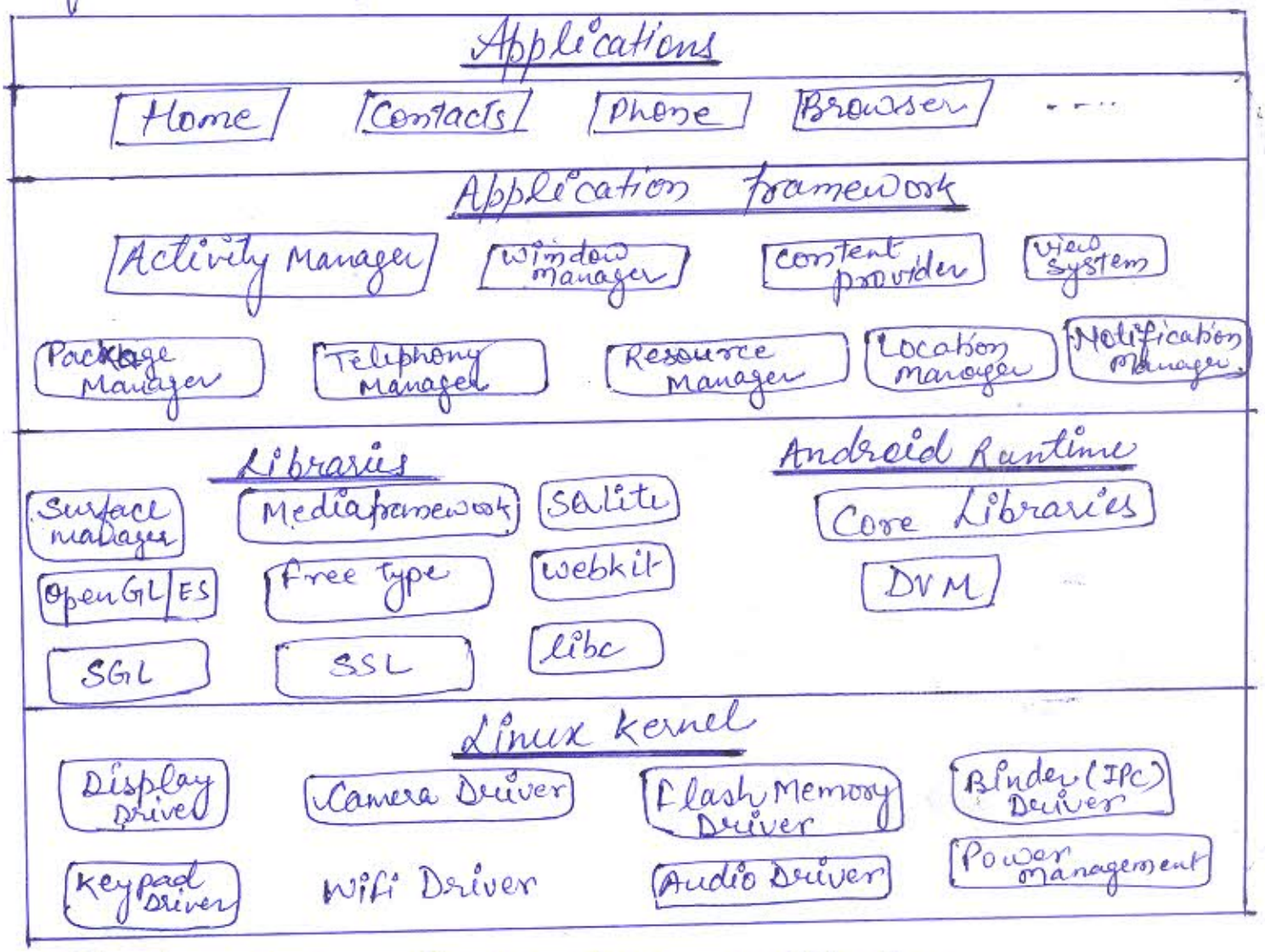
↳ Ex: cars have networks to control engine function, safety feautres, communication system and so on.

↳ As the IoT evolves these networks and many others will be connected with added security, analytics and management capabilities. This will allow IoT to become even more powerful.

Q8. Draw and explain ANDROID OS architecture with key components.

Ans: Android is a software stack for mobile devices that includes an OS, middleware and key applications Android is a mobile operating system developed by Google, based on the Linux kernel and designed primarily for touch screen mobile devices such as smart phones and tablets. Android's user interface is mainly based on direct manipulation

using touch gestures that loosely ~~coupled~~ corresponds to real-world actions, such as swiping, tapping and pinching to manipulate on-screen objects, along with a virtual keyboard for text input.



The key components of Android architecture

(i) Applications
(ii) Application framework
(iii) Libraries and ANDROID
(iv) Linux kernel

Q9. What are the attributes of a good programming language? Explain any two.

Soln. Attributes of good language: When we use any programming language its syntaxes, programming constructs, rules must be in manner that easily be understood and adapt by programmers, developers and other users of the programming language. The various attributes of good programming language are Clarity, simplicity, unity, Orthogonality, Naturalness for the application, Support for abstraction Portability of programs, Cost of use etc.

↳ Clarity, simplicity and unity: provides both a framework for thinking about algorithm and means of expressing those algorithms. It should provide a clear, simple and unified set of concepts that can be used as primitives in developing algorithms.

↳ Orthogonality – This term refers to the attribute of being able to combine various features of a language in all possible combinations, with every combination of features being meaningful.

Q10: What is the problem solving approach? Explain any one.

Soln: Before developing a software number of processes are done. For solving the problem, an algorithm is implemented. Algorithm is a sequence of steps that gives method of solving a problem.

On the basis of algorithm, program codes are written Algorithm helps a programmer in breaking down the solution of a problem into a number of sequential steps. A statement is written in a programming language. The steps before writting program codes are as:

→ User requirements
→ Problem Analysis
→ Input & output
→ Designing Algorithm
→ Program Coding

for ex Write an Algorithm to find addition of two integers.

1) Accept the first integer as input from the user (integer 1)
2) Accept the second integer as input from the user (integer 2)
3) Calculate the sum of the two integers as

integer 3 = integer 1 + integer 2

4) Display integer 3 as a result.
5) End;

Section-C

Q 11. What is big data? Explain three V's of Big Data with example of each.

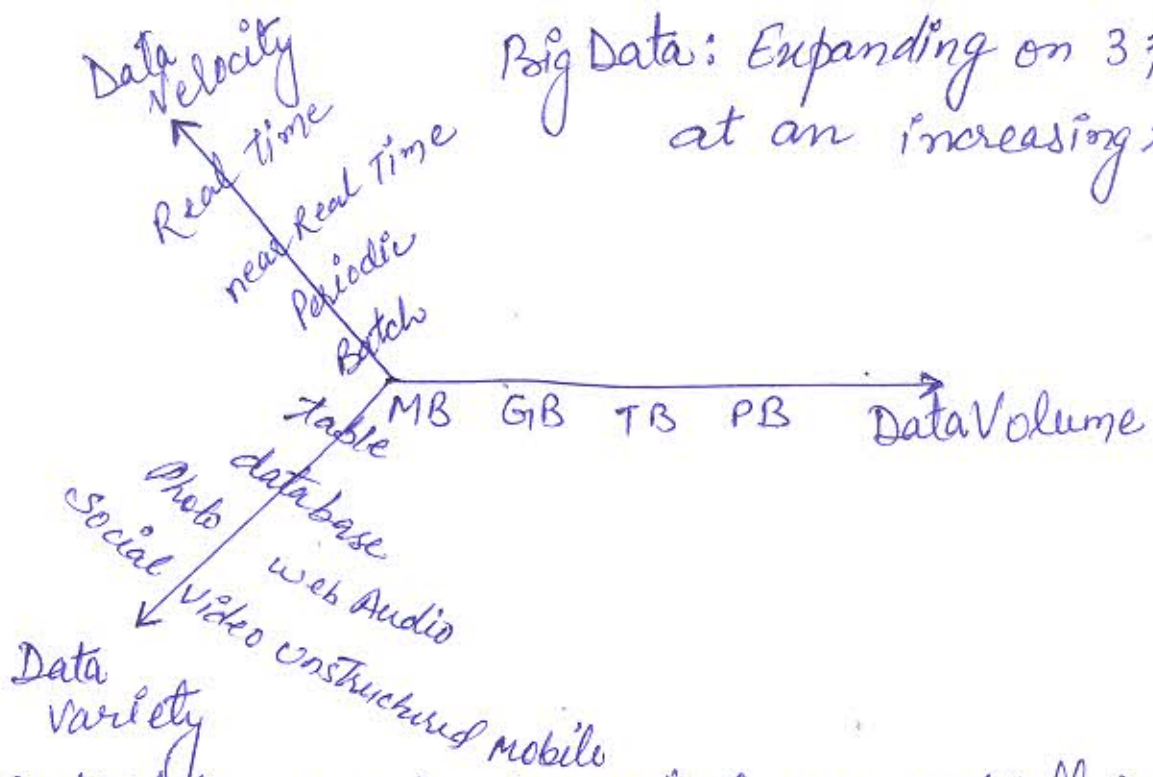
Soln: Big data is the term for a collection of data sets so large and complex that it becomes difficult to process using on-hand database management tools or traditional data processing applications.

↳ Big data analytics are the normal results of four global trends

- Moore's law (Technology always gets cheaper)
- Mobile Computing (Smart phones/tabs in our hands)
- Social Networking (facebook, twitter, instagram pinterest)
- Cloud computing

↳ Volumes of transactional data have been around for decades for most big firms, but the flood gates have now opened with more volume, velocity and variety — the 3 V's — of data

This perfect storm of the three V's makes it extremely complex and cumbersome with the current data management and analytics technology and practises.



Big Data: Expanding on 3 fronts at an increasing rate.

- Data Volume (is increasingly exponentially)
  - 44x increase from 2009 to 2020
  - from 0.8 zettabytes to 35zb
- Data variety
  - Relational Data (Tables/Transaction/legacy Data)
  - Text Data (web)
  - Semi structured Data (XML)
  - Graph Data
  - Streaming Data (Data that is generated continuously by thousands of data sources).
- Data Velocity
  - A single application can be generating/collecting many types of data
  - Data is begin generated fast and need to be processed fast
  - Online Data Analytics.

Q.12. What is binding time? Explain standardization and internationalization with suitable examples.

Soln. The bindings of a program element to a particular characteristic or property as simply the choice of the property from a set of possible properties. The time during program formulation or processing when this choice is made is termed the binding time of that propeity for that element. Withis the concept of binding and binding time the properties of program elements that are fixed either by the definition of the language or its implementation are also included.

Standardization: Mostly programming languages have standard definitions and all implementations should adhere to this standard. Standards generally come into two flavours:

a) Proprietary Standards: These are definitions by the company that developed and owns the language. For the most part, proprietary standards do not work for languages that have become popular and widely used. Variations in implementations soon appear with many enhancements and incompatibilities.

b) Consensus standards: These are documents produced by the organizations based on an agreement by the relevent participants. Consensus standards, or simply standards, are the major method to ensure uniformity among several implementations of a language.

To use standards effectively we need to address three issues

(i) Timeliness (ii) Conformance (iii) Obsolescence

Internationalization: with the globalization of commerce and the emergence of www, programming is increasingly a global activity, and it is important for languages to be voluntarily usable in multiple countries

↳ There is increasing need for computers to speak many different languages.

This issue is generally gone under the name of "Internationalization."

23/10/17