2010.1. What is Building Information Modelling (BIM) all about? Highlight the key features of BIM.
Differentiate between Building Information Modelling (**BIM**) and Building Information Model (BIM).
Read pages 1 and 2 (up to "A short definition of BIM")

Building Information Modelling or BIM is a technology that brings with it a new way of working.	
Building Information Modelling refers to **structuring** and **sharing** information via a model. A modeling technology and associated of processes to produce, communicate and analyse building model.	Process Perspective The process of generating and managing building data during its life cycle using three-dimensional, real time, dynamic building modelling software to create a shared knowledge resource about the structure Forms reliable basis for decisions during design, construction, operational and decommissioning stages Product perspective The process of generating data produces the building information model – BIM BIM encompasses building geometry, spatial relationships, geographic information, and quantities and properties of building components etc(Physical and functional characteristics of a structure)
Building Information Model: The building information model is usually created by software that uses object technology. An object, in computing, is something that has a name and properties, as well as relationships.	Features 1.Building components that are represented with digital representations (object) ▫ The objects carry computable graphic information ▫ The objects carry data attributes that identify them with software applications ▫ The objects carry parametric rules that allows them to be manipulated in an intelligent manner. (door and wall; light switch and door; objects can respond to violation of logic. 2.Components that include data that describes how they behave as needed for analysis e.g take-off and measurement etc. 3.Consistent and non redundant data – hence data are represented in all views of the component and the assembly e.g windows can be seen on plan as well as on elevations and consistently. 4.Coordinated data such that all views of the model are represented in a coordinated way BIM is created by software that uses IFC object technology physical items, the spaces between them and the processes involved which has a name and properties, as well as relationships. This is much more than simple geometric information. The beauty of objects and the relationships they represent lies in their scope and versatility.
Why BIM?	1.From checking planning regulations, through design, fabrication and construction to operations and FM right

BIM offers the promise of a central detailed database for a range of project applications, and its visual capabilities for all of them should be a notable advantage when considering how professionals can change and manage building information throughout a project. As new technology, BIM assisted cost estimating will not obsolete estimators; rather, it promises to free them to focus on higher value task than counting, returning increased value to project processes	through to decommissioning and demolition. 2.All the parties contribute to the central model and draw from it. Completed projects confirm its rich potential. 3.The technologies that underpin BIM have their roots in shared, structured information which, once created, can be used up and down the value chain. 4.At the heart of the BIM approach is the ability to structure and share information. Common shared information allows an integrated, responsive value chain to be created. It enables more efficient processes and the introduction of better analysis and checking methods sharing structured information enables the validity and quality of information used within the processes to be checked. 5. Moving from a 2D environment to a 3D BIM environment, or more precisely from a document-based environment to a databased environment, is a step change which needs careful management
3D model beyond previous technologies of CAD and generic 3D models which were purely geometric in nature.	BIM: Geometry is just one of the properties of building entities, but it serves as the primary interface to interact with a building database in BIM. Building information models track information on all of the components that comprise a building, and can range from the very generic to the fully detailed.
Traditional estimate: Manual take off estimators typically begin by digitizing the architect's paper drawings, or importing their CAD drawings into a cost estimating package, or doing manual takeoffs from their drawings. All of these methods introduce the potential for human error and propagate any inaccuracies there may be in the original drawings. The time spent by the estimator on quantification varies by project, but perhaps 50-80% of the time needed to create a cost estimate is spent just on quantification.	BIM based estimate : offers the capability to develop project cost information with more accuracy throughout the entire building lifecycle. the takeoffs, counts, and measurements can be generated directly from the underlying model. Therefore the information is always consistent with the design. Any changes automatically ripples to all related construction documentation and schedules, Time saving, cost and reduce the potential for human error. identifying construction assemblies, generating pricing, factoring risks, and so forth - that are essential for high quality estimates. Eg construction wisdom Reducing the quantification effort means estimators can more effectively apply their time and knowledge to higher value estimating activities. And architects can use the information within their design model to easily double check estimating quantities - facilitating concurrent estimating during the design process. For BIM-based estimating, can you see a new role within the estimating department ??