Generally, this style of Examination, which has a combination of essay and short answer questions, allows candidates with varying levels of competence to have ample opportunity to answer questions from a wide choice of options/topic areas. Graphic communication skills are also paramount as the need to generate and communicate design ideas through concept drawings and storyboards etc., is naturally expected from candidates studying a design based subject. In general terms the level/standard of sketching, which accompanied certain types of questions was not at a high a standard. The required standard of sketching was only seen in a low number of exams. The understanding of Orthographic projection was not illustrated well and in many instances a poor understanding was accompanied again by poor drawing skills.

Candidates working in a Level 3 Graphic Communication/Design based course would be expected to sketch at a high level incorporating orthographic and 3D perspective illustrations especially when dealing with object/product designs. Flowcharts, Sitemaps and in some cases storyboards etc., are well suited to 2D techniques but the use of colour and shading techniques can enhance the communication of ideas across all sketching techniques more easily.

Practical External Projects

Within the project folios, many research/analysis essays where a commentary on the process of producing the project, not an in depth study of an industry best relating to the candidates project. Very few candidates used correct referencing techniques. Maintaining academic integrity is paramount.

Many candidates struggled with formulating true and correct design briefs. Many examples where conceived after the project with no recognition of design requirements and limitations. Many design briefs had no context or meaning and where just a simple statement saying what it was they produced. A design brief should include:

- a scenario, situation or context.
- a statement of intent or problem to solve
- requirements and limitations
- timeline/project management
- a evaluation after the project in terms of achieving the intended project and whether the terms of the brief where achieved.

Authenticity of projects and evidence of progress is easily illustrated with screen captures but mean very little when poorly sequenced and annotated. Candidates should endeavour to eliminate any reason for doubt in terms of authentic candidate work.

Game engine driven presentations must have a clear distinction of original assets and content with descriptions and proof of authenticity.
Design projects must reflect the standards and conventions used in closely related industry equivalent. That means architectural projects must reflect a true and accurate architectural process. Stop frame animation must be created with ‘stop frames’, not video with every second or third frame removed. Websites must reflect industry standards and conventions.

Postproduction of animated sequences is important with good editing reflecting a well-designed computer graphic product. Opening single application files is not appealing so all candidates are encouraged to present digital content in a ‘presentation’ of some form.

Written Examination Paper

Question 1

This question was only attempted by a small number of candidates. Of those that did attempt the question, most had a sound understanding of how the use of spline based tools such as the pen tool could be used to create the curve going through the five points and how the adjustment handles could be used to refine the curvature of the line through each point. A few candidates found the question confusing in linking it to the context of computer graphics by describing the use of analogue tools such as French and flexi curves to construct a line though the 5 points.

Question 2

A popular question attempted by the majority of candidates. The answer deals mainly with lighting and texturing and the introduced environment. Strong responses included purpose lighting configurations e.g., 3 point lighting, named the types of lights used to create ambient and directional lighting. Candidates also mention textures, including bump maps and environment maps – surface attributes like specularity, gloss, reflection and refraction (within the jewel components). Transparency in terms of materials and the use of UV unwrapping for correct placement/composition of image maps. Also mapping coordinates to assist correct placement/application of textures. There were not a lot of strong responses mainly very general in terms of basic lighting and use of textures with no specific details as outlined

Question 3

Quite a few candidates attempted this question. The use of a plotted illustration or diagram would assist in obtaining partial assessment. Answers with just coordinates listed with some incorrect is seen as a ‘D’ rating. A correctly drawn illustration showing correct scale and grid alignment as some candidates did attracted partial scores.
Question 4

This was a very popular question with most candidates gaining a better than satisfactory result. Various acronyms were used as well as concepts such as ‘intake, compression, ignition, and release’. Some candidates appeared to have a pre-programmed answer for this type of question in that they were able to recite the acronym without providing a well-detailed explanation. Many candidates had a good understanding of the key elements of a typical design process but reference to the evaluation component was frequently missing.

Question 5

This question was attempted by a majority of candidates and was targeting knowledge about ‘motion capture’. To get a satisfactory mark there needed to be some form of reference to motion capture technology and to gain a high mark, candidates needed to describe and explain the basic principles of this technology. There were many low standard answers that simply stated ‘ask a doctor or physiotherapist’ or ‘research it on the internet’.

Question 6

This question was answered on two fronts. Firstly the process of creating a walk through animation using a camera on a path complimented with highly rendered still shots using daylight systems was common. Secondly the communication to the client was dealt with the use of a range of techniques from email attachments to up loading files into YouTube/cloud storage/Facebook and company websites. Physical posting printed images DVD, s or USB, s were also popular solution in to the way in which a client could view the design. A number of candidates only answered one aspect of the question.

Question 7

A small number of candidates chose to use a 3D modelling software program to generate 3D text and save it as a jpeg and then export it into a 2D software program, predominately Photoshop or illustrator. The stronger responses mentioned 2D software such as illustrator, which enabled the creation of vector images, which could be scaled without loss of quality.

Question 8

This was a popular question and well answered by many candidates. High-level answers described how 3d printing as form of rapid prototyping would be a suitable method of providing appropriate feedback for a visually impaired person to analyse their 3d design concept taking into account principles such as scale and proportion. They also described the production process of how 3d geometry is converted using formats such as STL to prepare for the ‘printing’ process and described the production processes of creating the prototype.
Question 9

This was attempted by many candidates and the overwhelming majority communicated a sound understanding of the differences between additive and subtractive colour systems. They correctly explained that RGB is an additive system and CMYK is a subtractive system and the higher level answers also communicated understanding of the theoretical basis of each system and cited appropriate examples. Some candidates understood the ideas behind the different systems but flipped their interpretation around by describing RGB as subtractive and CMYK as additive.

Question 10

A popular question with many candidates but not completed in its entirety (4 file types). Many candidates listed file types with technical specifications but failed to list commonly used applications. Strong answers included terms like raster, transparency, alpha channel, colour depth (8 bit, 24 bit – numbers of colours possible), file sizes, lossy, lossless. Common responses in terms of applications came from print, digital and web based mediums.

Question 11

A popular question not fully read or understood by many who attempted it. Many answers commented on the physical placement of monitors in terms of location for practical use. Basic answers included the physical arrangement and included obvious uses for the second monitor for tutorials etc. Strong answers commented on the two configurations of extended desktop and cloned or mirrored use and the extended desktop is a real advantage for graphics users in terms or screen ‘real estate’ = space for laying out tool palettes and additional windows.

Question 12

This was a popular question amongst most candidates. Scaling and rotating being the most common. Strong responses referred to how the axis point and X, Y, Z co-ordinates were affected by each particular function.

Question 13

Well-answered question with most candidates understanding that the tablet is an input device that enabled the user to hand draw images and graphics similar to the way in which a person draws with paper and pencil. Strong answers indicated that capturing data this way is called digitizing and that some tablets through the attached stylus are also used to replace a mouse as a pointing and navigating device for desktop computers.
Question 14

This question required some knowledge about RGB and CMYK colour systems and where each is commonly used. Understanding that ‘K’ (Key or Black) is added to Cyan, Magenta and Yellow to create a version of black that is darker than a muddy brown, represented the key to a successful answer in this question. Some candidates also commented on software adjustments to facilitate a stronger correlation between the screen and printed images.

Question 15

This was a quite straightforward question that targeted candidate’s knowledge of web based information systems. Typical successful answers made reference to Google Earth and Street View and Google maps. Some higher achieving candidates made reference to on line Geographic Information Systems including those made available by local government and state government agencies. Quite a number of candidates simply missed the point of the question and stated that the designer should get another party to collect the information on their behalf if they were unable to leave the office. Such answers generally gained a less than satisfactory result.

Question 16

This question was answered with a range of different methods with some candidates describing the production process of 3D models in general but not making a more direct link to the use of the concept art. The high level answers cited how the concept art could be used as design reference images and placed on reference planes in appropriate viewports within a 3d modelling application such that scale and proportion would be consistent. With the reference images in place then systems such as polygon based or spline based modelling were described to construct the 3D model. Outstanding solutions with regard to the use of polygon modelling described how a simple base structure could be used and extra level of detail added to refine and develop the model before applying a subdivision surface modifier to complete the modelling process.

Question 17

This was a very popular question. The design solutions presented typically discussed the anticipated issues of safety, security, sun and weather protection, parental supervision (view) and parent access. Most sketched designs were of a low standard. In order to gain a high mark in this type of question, candidates would need to move beyond 2 dimensional ‘box’ line drawings. Use of single point and 2-point perspective are encouraged along with rendering techniques that simulate texture and shading. Many sketches failed to stand up as a self-explanatory document. In other words, in the absence of the question, which explained what they sought to represent, it was in fact difficult to determine their meaning. Use of
drawing annotation is strongly encouraged to further enhance the visual information communicated in the sketch.

Question 18

Many candidates who attempted this question had little understanding of how to communicate the appropriate use of design elements and principles in the development of logo concepts. Few candidates were able to articulate the role of elements such as line; shape, text, tone and texture play in their design solution and how principles such as balance, space, emphasis and contrast are used to convey meaning to the application of the elements. A number of candidates just repeated the question in their description of design considerations in developing their logo concepts and brought little or no further understanding to the design development process. Many logo designs were either poorly thought through or overly complex for suitable use in a number of different contexts. Quite a few candidates also sketched concepts in ballpoint pen, which is not appropriate for the development of design solutions at this level.

Question 19

Not a popular question by candidates. Strong answers included:

- A clear application of the Design Process and the steps they would undertake – including the relationship with a client and the formulation of a brief
- Inclusion of feedback loops in the process for delivering prototypes to the client
- Technical understanding in terms of the site being a CMS (Content Management System) site and the implications for using a database driven site in terms of users accounts and login information.
- Styling controlled with CSS (Cascading Style Sheets) and basic page structures programmed with HTML, PHP etc.
- Useability and interface design including basic rules for site structure (Sitemap) and navigation method.
- Basic page elements like header, footer and column layouts illustrated with sketched page designs.
- Screen resolutions and the need for the design to be rendered in a variety of browsers and different sized portable devices.
- Sitemaps sketched illustrating the structure of the site and related navigation – often presented in a flow chart style.
- The need for consistency in layout design and if a landing or splash page was used how that fitted in with the look and feel of the site.
Question 20

Very few candidates answered this question. Most answers expanded on the design process in order to detail the steps in producing the video for section A. This generally was well done. All storyboards were well annotated with mention of appropriate text, audio sound effects and music. A number of candidates failed to read the question correctly and only produced 4 or 6 panels in their storyboard when the question specifically asked for 8.

Question 21

This question was only undertaken by a few candidates. Approximately half the candidates undertaking this question showed no evidence of understanding its intent. Quite a few candidates simply referred to the design of a particular type of product as being a ‘Design Movement’.

More successful candidates discussed design movements such as Bauhaus, Art Deco, Modernism, Minimalism and so on and provided accurate historical information pertaining to their geographical and chronological origins. Such candidates wrote knowledgeably about key practitioners within the movement, commenting on particular products, buildings, designs that these people had worked on in the context of how they influenced the design approach within the movement.

Question 22

Form and Function was attempted by many candidates. It is important to read the question closely and deliver what is expressly asked for. To define and discuss must be just that. Most definitions where good in terms of design commenting on the notion of aesthetic appeal and the way objects perform or operate. In discussing objects by way of examples of both effective and ineffective examples of form and function, woman’s shoes, electronic items and engineered structures like iconic buildings, bridges, cars, engineered vehicles and other architecture including housing where used.

Strong answers in terms of Form also included design principles and elements and commented on how they are used to create an aesthetic, which is kind to the human condition. Form was also covered from a tactile and visual perspective. Thorough discussion also commented on how function can complement form in the case of moving components within an object, again, strong responses commented on the Bauhaus movement and its role in establishing the recognition of form and function in terms of successful mass production of successful design.
**Question 23**

This was very popular question and candidates communicated a full range of responses. A diverse range of industry areas was addressed with popular areas being film, architecture and games. In general the architecture and film industry responses were well thought through and communicated a sound understanding of the benefits computer graphics technologies have brought to the industry area in terms of productivity, the capacity to communicate richer design solutions and to achieves styles and outcomes not previously possible. In addition, these responses also were able to make the link between pre digital technology contexts and how these contexts link to and have developed from the advent of and application of computer graphics technologies. Unfortunately many of the candidates who used the gaming industry as their topic in responding to the question had a very poor understanding of how gaming technology has evolved and befitted from computer graphics technological development. They often focused on a particular game and the style of game play that game involved.

**Question 24**

Very few candidates answered this question. Most candidates discussed how the role out of the NBN would advantage the consumer into the future compared with the current situation. Common areas of discussion were around bandwidth and speed. Candidates identified that computer graphic products are inherently large files that traditionally would have not been able to easily transmit over the internet would now become easily deliverable. More comprehensive answers discussed the reliability, cost of infrastructure and the speed for which people would take it up the NBN due to the cost associated with it.
## Award Distribution

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## Student Distribution (SA or better)

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