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Internal Assessment Test 2– June. 2024

Sub:	Fundamentals of Game Design						Sub Code:	22MCA423	
Date:	28/6/2024	Duration:	90 min's	Max Marks:	50	Sem:	IV	Branch:	MCA

Note : Answer FIVE FULL Questions, choosing ONE full question from each Module

		MARKS	OBE	
			CO	RBT
PART I				
1	Explain the different indirect Payment models for video games?	10	CO3	L2
2.	Explain the traditional and emerging markets for video games?	10	CO3	L2
PART II				
3	Describe the properties of physical dimension of a Game world?	10	CO3	L2
4.	What do you mean by temporal dimension? Explain Variable time and anomalous time in detail.	10	CO3	L2

5 Explain the significance of Environmental dimension and its properties in detail.

OR

6 Describe the need of emotion dimension in game world?

PART IV

7 What is self-defining play? Explain the forms of personality expression?

OR

8 Differentiate between functional and cosmetic attributes?

PART V

9 Explain how games can provide story telling play by allowing players to create stories and create a story telling play for your game

OR

10 Explain the following

a) Level Editors

b) Bots

10	CO3	L2
10	CO3	L2
10	CO4	L2
10	CO4	L3
10	CO4	L4
10	CO3	L2

1. Explain the different indirect Payment models for video games?

- By allowing them to pay a little at a time, or only for the parts of the game that they want to pay for, we make it easier to attract them to our games. However, most of these models work only with games that are delivered online, either with a continuous or a periodic connection to a server operated by the development company.

Freemium Games:

- In the freemium (free+premium) model, a business gives away a partially functional version of its software but allows customers to purchase upgrades that render it more useful.
- The first products to be widely successful under the freemium model were antivirus suites.
- In the case of games, you give away the game but offer premium items for sale within the game (called in-app purchases or IAPs) that make the game more fun or interesting.
- This usually takes the form of downloadable content (DLC).
- Downloadable content can consist of all kinds of things: extra levels, new clothing for an avatar character, additional game modes, and new objects in the game, such as weapons or powerups.
- Dance games often offer additional music as downloadable content, which helps to keep the experience fresh if the players are getting tired of the music that came with the original game.
- The chief criticism of the freemium model, from a player's perspective, occurs when the game isn't any fun without buying the premium content
- The freemium model affects game design because rather than designing one single experience, you have to design an experience that can be upgraded through purchases—and you have to make sure that these purchases are desirable enough that you can earn a living from your game

Free-to-Play:

- In free-to-play games, players get a version of the game that is free but is designed to encourage them to pay a subscription or some other kind of fee
- A common design allows players to play completely free of charge forever, but advancement in the game is very slow, and players must log off periodically and come back later to continue. Paying a fee removes this limitation.
- Another approach puts free players on one set of servers and paying players on another. The servers for paying players are much less crowded, so the player experiences better performance from the game.
- Many free-to-play games are designed to offer the player a small amount of advancement in the game at frequent intervals in response to fairly trivial player activities—sometimes this means the player doesn't have to do anything more than click a button to advance, as in Mafia Wars.
- The free-to-play model is closely related to the freemium model, and many free-to-play games also include premiums that players can buy

Advertising and Sponsorships:

- You can earn revenue by selling advertising alongside your game. Advertising that appears beside your game on the player's screen does not intrude too much, and you earn money for each person who sees, or clicks on, one of the ads
- This model is normally used for online games and, if successful, can even enable you to give away the game for free and make all the money from the ads.
- Example facebook games and yahoo games
- Some developers also sell an ad-free version of the same game to players who don't like the advertisements and are willing to pay not to see them.
- You can also have advertisements appear within your game; you do this by selling sponsorships to companies that want to have their message in your game world.
- If your game is a standalone game sold at retail or online, the sponsor simply pays you based on the number of copies that you sell; if the game is an online game delivered via a server, they will pay you per view or per click as is done when the advertising appears alongside the game.
- Sponsorships are most common in sports games and vehicle simulations that emulate a real-world sport or car race.
- The design implications of advertising, and especially of sponsorship, are that your game content must not upset your sponsors

Commissioned Games:

- which you get paid to build a game for someone else, but you don't get any royalties for sales.
- The only money you see is what you get paid to build the game in the first place, which means that you must build your profit margin into the price you charge to do the work.
- For charity or government agency

2. Explain the traditional and emerging markets for video games?

Traditional Markets The traditional markets for video games are, not surprisingly, in the developed and high-tech world. Even these, however, are quite distinct. They include **The English-speaking world**. The U.S. is the largest market for video games in the world, and the vast majority of games, no matter where they are developed, are aimed at this market. (Games made by the Japanese for their own large market are a notable exception.) Americans like happy endings; they prefer to see virtue rewarded. Grim Kafka-esque stories are not popular except among a subcategory of disaffected youth. Games with military themes also sell well generally in the U.S., but as the country that invented video games, with a large, diverse population, almost any kind of game can be developed for this audience.

Continental Europe. European demand for games is similar to the American demand, but Europe is more complicated to develop for because each nation has its own language, and tastes in games vary somewhat among them. Many Northern Europeans (Nordic countries and the Netherlands) are happy to buy games in English because they routinely learn English in school. The largest markets, however, including France and Germany, prefer games in their own language. In general, Europeans like darker stories and regard

some games made for Americans as rather saccharine. They are much less concerned by nudity and sexual themes than Americans are and are more disturbed by violence. Also, as a result of their experience with Nazi Germany, Europeans are suspicious of overt displays of patriotism. A uniform labeling standard called Pan European Game Information (PEGI) is emerging so that developers don't have to submit their games to be rated to authorities in each country

Japan. The Land of the Rising Sun is unique among video-game-playing countries. Some of the most successful game characters and franchises (Mario, Zelda, Final Fantasy, Metal Gear Solid, and so on) come from Japan, yet these games make few concessions to Western tastes. Rather, Western gamers have come to appreciate Japanese games just as they are. The converse is not the same, however; the Japanese do not play many Western games, and it is almost impossible for a Western game company to work in Japan without a Japanese partner. Japan has a large and highly successful game industry of its own, and in addition to the worldwide hits just mentioned, the game industry in Japan makes many, many games that they never export because the Japanese consider them too distinctly Japanese to be popular elsewhere.

South Korea. Korean demand for games is not as great as that of Japan and, as a more socially conservative country, erotic content is less acceptable. The most distinctive feature of Korean gaming is how Koreans like to play: in public spaces. Role-playing and real-time strategy games and especially massively multiplayer online role-playing games (MMORPGs) are particularly popular, and these are played in a PC bang (literally, "PC room")—a large commercial space outfitted with many desks and LAN-connected PCs, rather like an Internet café only much bigger. Professional gaming is also more popular in South Korea than anywhere else.

Emerging Markets:

China. Although China is not as economically advanced as the rest of the Far East, its sheer population makes it one to watch in the future. Software piracy is rampant in China, so developers have turned to selling online games that use a subscription or freemium model; as a result, China now contributes one third of the worldwide online gaming revenue. Video game consoles were banned as harmful to youth education until 2013, and it remains to be seen if sales will be significant now that they're allowed. Because few Chinese can afford personal computers, Internet cafés are popular. The Chinese government is cautiously supportive of gaming, but is suspicious of anything that could be interpreted as criticism of the authorities or their policies.

India. With a population close to that of China and a growing middle class, India is the next country to watch as an emerging market. However, despite these indicators, the country is unlikely to take up PC and console games in large numbers soon. Despite having a similar population, India has only a little over one-fourth as many PCs as China does. In India, there is a strong emphasis on education, which makes parents reluctant to buy consoles. Consequently, the Indian gaming revolution, when it comes, will almost

certainly be on mobile phones. At the moment only 10 percent of India's 400 million mobile phones are smartphones capable of playing games, but we can expect this to change over the next few years.

Mexico, Central, and South America. This region has a rapidly growing enthusiasm for games, but of course it has a far smaller population than either of the two preceding countries. Brazil is an emerging economic powerhouse, and the Mexican retail video game industry is now larger than the movies and music industries combined, and it is still growing rapidly.

The Islamic world. Certain parts of the Islamic world (Saudi Arabia, the Emirates) are very wealthy and can easily afford video games, while others (Sudan, Palestine) are severely disadvantaged. These markets will continue to grow in the future, though much more slowly than India and China. The real obstacle to acceptance of video games is cultural. Muslim countries have no history of video gaming and are unlikely to want games made for the West. Their social conservatism, even greater than that of India, means that great care must be taken not to offend local sensibilities. Contrary to stereotype, most of the Muslim world does not speak Arabic (the largest Muslim country in the world is Indonesia), but there is a band of Arabic-speakers from North Africa to Iraq that will make it easier to localize games for those countries

Sub-Saharan Africa. This region will be the last to get into video gaming for both financial and cultural reasons. These nations speak hundreds of different languages and localizing for them will be extremely difficult; in addition, they have less money available for luxury entertainment like video gaming, and no history of involvement with high technology

3. Describe the properties of physical dimension of a Game world?

Video game worlds are almost always implemented as some sort of simulated physical space. The player moves his avatar in and around this space or manipulates other pieces or characters in it. The physical properties of this space determine a great deal about the gameplay. Three of these properties are spatial dimensionality, scale, and boundaries.

Spatial Dimensionality:

It is essential to understand that the dimensionality of the game's physical space is not the same as how the game displays that space (the camera model) or how it implements the space in the software.

These are the typical dimensionalities found in video games

2D. Thanks to the explosion in casual and mobile gaming, most of the video games in the world still have only two dimensions. This design is especially noticeable in 2D side-scrolling games such as Prince of Persia Classic, a remake of the original Prince of Persia. The two dimensions of the world directly correspond to the two dimensions of the monitor screen, so you don't have to worry about conveying a sense of depth to the player. Some games with 2D game worlds still use 3D engines to display the world so

that objects appear three-dimensional even though the gameplay does not use the third dimension.

2.5D, typically pronounced “two-and-a-half D.” This refers to game worlds that appear to be three-dimensional spaces, but in reality, consist of a series of 2D layers, one above the other. StarCraft, a war game, shows plateaus and lowlands, as well as aircraft that pass over obstacles and ground units. The player can place objects and move them horizontally within a layer with a fine degree of precision, but vertically an object must be in one plane or another; there is no in-between. Flying objects can’t move up and down in the air

3D. Three true dimensions. Thanks to 3D hardware accelerators and middleware engines like Unity, 3D spaces are now easy to implement on hardware that supports them. They give the player a much greater sense of being inside a space (building, cave, spacecraft, or whatever) than 2D spaces ever can. With a 2D world, the player feels as if he is looking at it; with a 3D world, he feels as if he is in it. 3D worlds are great for games with exploration challenges or vehicle simulations such as Need for Speed

4D. If you want to include a fourth dimension for some reason (not counting time), implement it as an alternate version of the 3D game world rather than an actual four-dimensional space. In other words, create two (or more) three-dimensional spaces that look similar but offer different experiences as the avatar moves among them. For example, the Legacy of Kain series presents two versions of the same 3D world, the spectral realm and the material realm, with different gameplay modes for each.

Scale

○ Scale refers to both the absolute size of the physical space represented, as measured in units meaningful in the game world (meters, miles, or light-years, for instance), and the relative sizes of objects in the game. If a game doesn’t correspond to anything in the real world, the sizes of objects in its game world don’t really matter. You can adjust them to suit the game’s needs any way you like. Some distortion is necessary for gameplay as long as it doesn’t harm the suspension of belief.

In Realistic scale for example in sports game it should be the vehicle simulator and first person view and in Aerial or isometric perspective we need to distort the scale of things. In SimCity Characters may need to walk at different speeds when they walk indoors and outdoors.

In war games, you have to adjust the speed and range of the weapon Some distortion is necessary. Airplanes, missiles, and rockets may need to be slowed down. In Air Land Battle Wargame: Red Dragon we need Distort the relative height of people and buildings: In Age of Empires we may want to slightly exaggerate the size of the key objects so it’s more visible.

BoundariesIn board games, the edge of the board is the edge of the game world. With procedural rendering, we can create unlimited game worlds, but normally we establish artificial boundaries to avoid overwhelming the player or letting her go into regions

where no gameplay has been implemented. Computer games are usually more immersive than board games, and they often try to disguise or explain away the fact that the world is limited to help maintain the player's immersion.

In some cases, the boundaries of a game world arise naturally, and we don't have to disguise or explain them. Sports games take place only in a stadium or an arena, and no one expects or wants them to include the larger world. In most driving games, the car is restricted to a track or a road, and this, too, is reasonable enough

4. What do you mean by temporal dimension? Explain Variable time and anomalous time in detail.

The temporal dimension of a game world defines the way that time is treated in that world and the ways in which it differs from time in the real world. In many turn-based and action games, the world doesn't include a concept of time passing: days and nights or seasons and years. Everything in the world idles or runs in a continuous loop until the player interacts with the game in some way.

In some games, time is implemented as part of the game world but not part of the gameplay. Minecraft is a good example of a game in which time is meaningful. Many of the enemies in Minecraft are inactive during the daytime. It's also darker and hard to see at night. In the underground portions of the game, day and night have less meaning, as you would expect.

Variable Time: Game time usually runs faster than real time, and jumps or changes rate ■ War games often don't implement nighttime or rest. For example In "The Sims" a game about managing a household Time speeds up when everyone goes to sleep, then slows down when characters wake up Time management is one of the most important challenges. The clock in the game is about 48 times as fast as in real life. But the motion is not that different from real life. Characters seem to do things slowly. Creates time pressure to complete tasks quickly.

Anomalous time—time can move at different speeds simultaneously in different parts of the game In The Settlers: Rise of an Empire game Time moves at different speed in different parts of the game. A tree can grow very fast. But overall they are well balanced. In Age of Empires 2, in which tasks that should take less than a day in real time (gathering berries from a bush, for example) seem to take years in game time according to the game clock. Age of Empires does have a time scale, visible on the game clock, but not everything in the world makes sense on that time scale.

5. Explain the significance of Environmental dimension and its properties in detail.

It Describes the world's appearance and its atmosphere. This includes art and audio. The two particular properties include the cultural context of the world and the physical surroundings.

Cultural Context The cultural context of a game refers to its culture in the anthropological sense: the beliefs, attitudes, and values that the people in the game world hold, as well as their political and religious institutions, social organization, and so on—in short, the way those people live. These characteristics are reflected in the manufactured items that appear in the game: clothing, furniture, architecture, landscaping, and every other man-made object in the world. The culture influences not only what appears and what doesn't appear (a game set in a realistic ancient Egypt obviously shouldn't include firearms), but also how everything looks—including the user interface. Cleopatra: Queen of the Nile is an excellent example of a game's culture harmonizing with its user interface.

The cultural context also includes the game's backstory. The backstory of a game is the imaginary history, either large-scale (nations, wars, natural disasters) or small-scale (personal events and interactions), that preceded the time when the game takes place.

For most game worlds, it's not necessary to define the culture or cultures in great detail. A game set in your own culture can simply use the things that you see around you. The SimCity series, for example, is clearly set in present-day America (few European cities are so rectilinear), and it looks like it. But when your game's culture does not resemble your own, you need to think about how it is different, and how you will convey that to the player.

Physical surroundingsThe physical aspects of the game world—its environment and contents—define what the game actually looks and sounds like. This is a part of game design in which it's most helpful to be an artist or to work closely with one. In the early stages of design, you don't need to make drawings of every single thing that can appear in the game world. It includes every man made object, natural object, and sound in the game world. It Sets the tone and mood. The physical world includes sounds as well as sights: music; ambient environmental sounds; the particular noises made by people, animals, machinery, and vehicles

The environmental dimension also include Visual style, Color, Lighting , Texture , Level of detail ,Photo realistic or more abstract. We must have single vision throughout the the game, especially when the game is designed by a team.

It should address How much detailing is needed? We can include as much detail as possible to improve immersiveness until it hurts gameplay. The Style includes both: Content of the world itself and How that content is presented to the player. The content includes Futuristic robot, Medieval town and content presentation includes Realistic rendering ,slightly abstract and Hand painted .The drawing style imposes its own atmosphere over the content.

Overused settings: All too often, games borrow settings from one another or from common settings found in the movies, books, or television. A huge number of games are set in science fiction and fantasy worlds, especially the quasi-medieval, sword-and-sorcery fantasy inspired by J. R. R. Tolkien and Dungeons & Dragons, popular with the

young people who used to be the primary indeed, almost the only market for computer games. But a more diverse audience plays games nowadays, and they want new worlds to play in. You should look beyond these hoary old staples of gaming

6. Describe the need of emotion dimension in game world?

Emotional Dimension can take place in different ways ○ Gameplay ○ Story ○ Interacting with NPC ○ Interacting with the game world ○ Interacting with other players

A game can evoke different emotions in a player:

○ They can create “the thrill of victory and the agony of defeat,” as the old ABC Wide World of Sports introduction used to say. Use the elements of risk and reward—a price for failure and a prize for success—to further heighten these emotions.

○ Games can also produce frustration as a by-product of their challenges, but this isn’t a good thing; some players tolerate frustration poorly and stop playing if it gets too high. To reduce frustration, build games with player-settable difficulty levels and make sure the easy level is genuinely easy.

○ If you can devise a close contest or a series of stimulating challenges, you will generate these kinds of emotions. Construction and management simulations, whose challenges are usually financial, arouse the player’s feelings of ambition, greed, and desire for power or control. They also offer the emotional rewards of creative play

○ The SimCity and various Tycoon games (RollerCoaster Tycoon, Railroad Tycoon, and so on), do this well. Artificial life games and god games such as Spore or The Sims let the player control the lives of autonomous people and creatures for better or worse, satisfying a desire to be omnipotent over a world of beings subject to the player’s will.

○ To create suspense, surprise, and fear, use the time-honored techniques of horror films: darkness, sudden noises, disgusting imagery, and things that jump out at the player unexpectedly.

Interaction with NPC

○ A player can identify with a game character.

○ Create characters that the players care about. Then threatening the character and putting obstacle in the way of the character. It creates drama tension. Example Final Fantasy VII: Aeris’ death It gives players different moral choices to make, with varying consequences.

○ BioShock’s different endings.

The Comedy works best in adventure games, which tend to have more detail characters.

○ RPG occasionally include funny moments.

○ Need to be careful.

● Balance fun (light entertainment) with more serious and complex

○ Make sure the players have a good time.

○ This is an issue with many educational games.

7. What is self-defining play? Explain the forms of personality expression?

Self-Defining play let players project their personality into a game. When a player selects a token to represent herself in Monopoly, she chooses an avatar and so engages in an act of self-definition. Many games allow the player to choose an avatar from a number of different ones available and to customize the avatar in various ways. Because the avatar represents the player in the game world, these activities are called self-defining play. Players greatly enjoy defining themselves, choosing an avatar that either resembles them physically (if it's a human character) or that is a fantasy figure with whom they identify.

Forms of Personality Expression

Self-defining play gives the player an opportunity to project his personality into the game world, and explore alternate identities, by means other than gameplay choices. It takes several forms:

Avatar selection allows the player to choose from a number of predefined avatars, usually at the beginning of the game. These avatars are most often humanoid characters, but in driving and flying games, they're vehicles. Many driving games start the player with a small selection of cars, motorcycles, or whatever vehicles are involved and make new choices available as the player's performance improves. You can let the player purchase a new car with winnings earned in previous races, for example. The right to choose a new and more powerful avatar serves as a reward to some players.

Avatar customization allows the player to modify the appearance or abilities of an avatar that the game supplies by modifying its features. In role-playing games (RPGs), this often takes the form of giving the avatar new skills, clothing, weapons, and armor. In driving games, the customizable features may include the paint color of the car and its engine, transmission, tires, and brakes. Customization can occur both at the beginning of the game and through upgrades awarded or purchased as the game goes on. In this way, a player creates a unique character of her own design. Customization can be purely cosmetic or visual, as with the Nintendo Mii characters, or it can include choices about the character's attributes that may have an effect on gameplay. Younger children pay more attention to visuals than to attributes, as they are not yet used to thinking about games as systems.

Avatar construction gives the player the greatest freedom of all; he can construct his avatar from the ground up, choosing every detail from a set of available options. Usually offered in RPGs, avatar construction allows the player to choose such features as the sex, body type, skin color, and clothing of the avatar, as well as the avatar's strength, intelligence, dexterity, and other functional qualities. The online RPG Lord of the Rings Online offers a particularly extensive avatar construction feature, as does the single-player RPG The Elder Scrolls IV: Oblivion for the PC. Some, such as Second Life and Minecraft, even let the player import his own graphics for avatars or clothing.

8. Differentiate between functional and cosmetic attributes?

Functional Attributes	Cosmetic Attributes
Interacts with core mechanics	No interaction with core mechanics

Focus on the fundamental aspects of a character	Focus on appearance of a character
Can be sub divided into characterization and status attributes	No other categories
Need to test	No need to test for every change
These attributes contribute to achieve goals and rules	These attributes will not contribute to achieve goals and rules
These attributes define the properties which changes frequently and slowly	These attributes define the properties which changes frequently and slowly
Example: airspeed of an aircraft	Example: color of an aircraft

9. Explain how games can provide story telling play by allowing players to create stories.

Some players enjoy creating stories of their own, using features provided by a game, which they can then distribute online for others to read. For Example “The Movies by Lionhead Studios” provides players with actors, sets and camera control which they can use to create movies. It lets players export their creation as a video file so they can edit it using softwares like Adobe Premier. It requires a lot of time and effort. If you want to make a game with similar features, you will have to work with the programmers to design a system that allows players to set up cameras in the game world, record the images and sounds generated by the game engine, and edit them.

The independent designer Jason Rohrer used another approach in his game Sleep Is Death. This game is designed for two players, the storyteller and the story-player. The teller creates a story-like experience in real time for the player and has to react to the player’s actions. It has something in common with tabletop role-playing in that respect, but it avoids all the number crunching and the emphasis on quests and magical items. But we don’t have to build a complex storytelling mechanism for someone to play with. The Sims proved to be a huge success with a much simpler system: Players can create characters and construct houses for them to live in, and then initiate events by giving commands to the characters. The Sims also lets players capture screen shots from the game, put captions under them, organize them into storyboards, and upload them to a website for others to see. Telling stories this way requires much less complex software than The Movies uses, and the players don’t have to know how to edit video.

An even easier solution involves generating a log of the player’s activities in text form. She can then edit this log any way she likes, turning her raw game actions and dialogue into narrative form.

10. Explain the following

a) Level Editors

b) Bots

Level Editors A level editor allows players to construct their own levels for a game. Some level editors permit players to define only a new landscape; others allow them to define new characters as well; and a few go so far as to permit rebuilding the entire game. Generally, however, a good level editor lets the player construct a completely

new landscape, place challenges in it, and write scripts that the game engine can operate. If you work on a large game for commercial sale, your team will almost certainly include tools programmers who will build a level editor for the level designers to use. To make the level editor available to the players, rather than useful only as an in-house tool, you must make sure it is as robust and well-designed as the game software itself.

Two superb level editors are the 2D StarCraft Campaign Editor, which is included with StarCraft, and the Hammer 3D editor that comes with Half-Life 2.

Bots A bot is an artificially intelligent opponent that the player can program for himself. (Bot also has a secondary meaning: a program that help players cheat at multiplayer networked games. This section is about the other kind.) By building bots, players can create tougher and smarter opponents than those that normally ship with the game (usually a first-person shooter). Some players use bots as sparring partners for practice before playing against real people in online tournaments