C–7744	Sub. Code
	83711

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

First Semester

Game Technology

GAME DEVELOPMENT PROCESS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Outline the importance of communication.
2. What is Digital Media Interactive Design?
3. What are social impact games?
4. What is Alea gaming?
5. Show any two examples of transmedia.
6. What does balancing mean in art?
7. Define Game space.
8. What is object-oriented design?
9. Define Code.
10. All games are ergodic object, Justify.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the types of players.

Or

(b) Outline the importance of MDA framework.

12. (a) Describe about the loop of interaction.

Or

(b) Write notes on braided plot in game design.

13. (a) Outline the purpose of transmedia with suitable example.

Or

(b) Write note on nature of game character.

14. (a) How do stats work in games? Explain.

Or

(b) Write note on design pattern in game development.

15. (a) How is flow achieved in game design? Extend.

Or

(b) Why are game interactions important?

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the principles of game design with suitable examples.

Or

(b) Outline the fundamentals of human-computer interaction in game development process.

17. (a) Extend the history of gaming and its development process.

Or

(b) Analyse social functions of games in modern society.

18. (a) Explain the process of game development.

Or

(b) Outline the tools used for Game level design with suitable example.

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C–7745	Sub. Code 83712

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

First Semester

Game Technology

GAME DESIGN CHALLENGES

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Explain slow boil approach in game designing.
2. What is albedo?
3. What is Dilemmas?
4. Mention the components of game.
5. Define the term Sequel. List the types of Sequels.
6. Why do we need character?
7. What is Griefing in games?
8. What is the most popular game in roblox?
9. Game is a teaching tool. Justify the statement.
10. Why do we need conflicts in games?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What are game design atoms? Explain in detail.

Or

(b) Write a note on types of game design.

12. (a) Explain the trade-off mechanics that leads to interesting decision making.

Or

(b) Briefly explain the importance of mechanics.

13. (a) Explain campbell's five-part story arc.

Or

(b) Explain the methods of storytelling with examples.

14. (a) What is the future of social networking games?

Or

(b) Explain the issues in multiplayer game design.

15. (a) Explain the power of games beyond fun and entertainment.

Or

(b) "Games as a teaching tool" – justify your answer with suitable examples.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain about the element and role of chance in game designing.

Or

(b) What is puzzle designing? Explain the various types of puzzles. Create one new puzzle game on your own.

17. (a) What are multiplayer games? Explain the types and issues associated with multiplayer games.

Or

(b) Define sequels and explain its types and importance.

18. (a) Explain in detail on how to balance between skill and chance in games.

Or

(b) How to make a multiplayer? Explain multiplatform, multipurpose and types of multiplayer games.

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C–7746	Sub. Code
	83713

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

First Semester

Game Technology

VISUALIZATION

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What do you mean by one point perspective drawing?

2. Define liner perspective.

3. What is the most important factor of human figure drawing?

4. What are the fundamentals of figure drawing?

5. What is a figure composition?

6. Mention the purpose of typography.

7. Define texture.

8. Mention the importance of colouring.

9. What do you mean by concept art?

10. Mention the importance of script writing.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the five different type of color harmony.

Or

(b) Explain in detail about different drawing materials and tools.

12. (a) What are the different types of texts in art?

Or

(b) Illustrate Story board for your favourite cartoon show.

13. (a) Write the differences between additive and subtractive model.

Or

(b) What is 3D viewing?

14. (a) Write the differences between realistic and semi realistic characters.

Or

(b) Define Script writing.

15. (a) Explain one point perspective with two examples.

Or

(b) Explain in detail about different Drawing Techniques.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Define Proportion and gesture with suitable illustrations.

Or

(b) Write an essay on design fundamentals and characteristics of good design.

17. (a) Illustrate the importance of colour wheel and explain in detail the importance of colour in the current scenario.

Or

(b) Explain the character development process.

18. (a) Write short note on the following :

(i) Thumbnail drawing

(ii) Stick figures

(iii) Line of action

(iv) Balance and rhythm

(v) Positive and negative spaces.

Or

(b) Write are the principles of

(i) Gestalt theory

(ii) Color theory.

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C–7747	Sub. Code
	83714

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

First Semester

Game Technology

PROGRAMMING FOR GAMES

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. What is the significance of processor clock?
2. What are the most widely used application software?
3. What are modifiers?
4. Define looping.
5. What is polymorphism? What are its types?
6. What is dynamic binding or late binding?
7. What is namespace in C++?
8. Differentiate put ( ) and get ( ).
9. What is meant by Derived Containers?
10. Explain containers.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the different types of computer software.

Or

(b) Explain the characteristics of Computers.

12. (a) Explain call by reference with an example.

Or

(b) What is the difference between equal to (= =) and Assignment Operator (=) and explain with an example?

13. (a) Explain function overloading with an example.

Or

(b) With an example, explain multilevel inheritance.

14. (a) Explain namespaces with an example.

Or

(b) Write a program to handle exceptions.

15. (a) Explain shortest path algorithm.

Or

(b) Write a program to find the sum of digits until it becomes a single digit.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain relational and logical operators with example.

Or

(b) Explain classification of computers.

17. (a) Briefly explain the facilities available in fatream class for file operations with example.

Or

(b) What is exception handling? Write a C++ program to demonstrate the "try", "throw", and "catch" keywords for implementing exception handling?

18. (a) Explain friend function with suitable example.

Or

(b) Explain binary search algorithm with example.

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C–6565	Sub. Code 83721

M.Sc. DEGREE EXAMINATION, APRIL 2022.

Second Semester

Game Technology

2D GAME ART

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write a short note on drop shadow.

2. Name the different types of cropping.

3. What is game UI?

4. Explain grid.

5. Define magic selection tool.

6. Define color mixture.

7. Define smart objects.

8. Define logo design.

9. What are dual brushes? Name them.

10. Write a short note on paint bucket and zoom tool.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What is object drawing? Explain.

Or

(b) Write a short note on image editing applications.

12. (a) What is matte painting?

Or

(b) Write a short note on game asset design.

13. (a) What are the qualities of a good logo?

Or

(b) How to make a sprite sheet in Photoshop.

14. (a) Write the usage of the following basic tools in game

(i) Move tool

(ii) Brush tool

Or

(b) Explain the three different tools used for logo designing.

15. (a) What are the different types of bushes used in digital painting?

Or

(b) Explain the importance of storyboard.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write sort note on

(i) Group and ungroup objects

(ii) Pen tool and brush tool

(iii) Dropper

(iv) Alpha in color swatches

Or

(b) Drawing plays an important part in game design. Describe the importance.

17. (a) Explain the usage of

(i) Fill tool

(ii) Patch tool

(iii) Air brush

(iv) Blur tool

(v) Spot healing tool

Or

(b) Explain the uses of

(i) Free form pen tool

(ii) Convert point tool

(iii) Magic wand tool

(iv) Polygonal lasso tool

(v) Path selection tool

18. (a) Write a short note on

(i) 2D animation

(ii) Pixel art animation

Or

(b) What is pixel art? How it is used in games? Explain briefly.

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C–6566	Sub. Code 83722

M.Sc. DEGREE EXAMINATION, APRIL 2022.

Second Semester

Game Technology

GAME DEVELOPMENT USING ENGINE – I

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Compare 2D and 3D concepts.

2. Define Screen position.

3. Define scripting.

4. What is Game object?

5. Define the properties of camera.

6. List the different came options used in game engine.

7. What is Game UI?

8. State the purpose of networks.

9. List out the events in game play.

10. What are the actions in the game?

Part B (5 × 5 = 25)

Answer **all** questions

11. (a) Explain about 3D game Development with some example.

Or

(b) Discuss about 3D game world with example.

12. (a) Explain in detail about the game objects behavior.

Or

(b) Write short notes on different colliders used in games.

13. (a) Explain about the cinematics properties in detail.

Or

(b) What are the functions used to identify the memory leaks?

14. (a) Design a Game UI for your game idea.

Or

(b) Explain about the information sharing to HUD.

15. (a) Differentiate update and fixed update.

Or

(b) Illustrate the basic AI elements in the game play.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain briefly about the 3D game development and its advantages.

Or

(b) Illustrate how to host the game in networking with example.

17. (a) Explain briefly about Ray casting used with example.

Or

(b) Discuss briefly about goal oriented action plan in AI.

18. (a) Explain briefly about Particle system used in game engine.

Or

(b) Illustrate the Profiler window with example.

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C–6567	Sub. Code 83723

M.Sc. DEGREE EXAMINATION, APRIL 2022.

Second Semester

Game Technology

3D GAME ART

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write about Cut Curve Options in Maya.

2. Define detach.

3. How to use the Bezier curve tool in Maya?

4. Write about Trim or Untrim a NURBS surface.

5. What is a specular map in Maya?

6. What is a Glow Map?

7. What are the benefits of polygon modeling?

8. What is called Auto-Align in Photoshop?

9. Define Blueprint of a car.

10. What is the use of the Sculpt Geometry tool?

Part B (5 × 5 = 25)

Answer **all** questions

11. (a) Write about rotating an object in three dimensions.

Or

(b) Write Offset Curve deformer for knee, shoulder and elbow in Maya.

12. (a) How to convert a curve to a polygon in Maya?

Or

(b) How to use the Booleans tool in Maya?

13. (a) How to control texture color and diffuse in Maya?

Or

(b) How to retopologize in Maya? Explain the techniques to achieve realistic character modeling for the game.

14. (a) Discuss the approaches to blocking character poses in Maya.

Or

(b) Write about Modeling a low poly game weapon.

15. (a) Describe the concept of world design.

Or

(b) How to create 3D game assets? Explain.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) What are the devices for virtual reality and 3D interaction? Explain.

Or

(b) What are Maya workspaces and how to customize the UI? Explain.

17. (a) Explain how to stitch multiple surface edges, corners together in Maya.

Or

(b) Write about simulated reflections used in Maya.

18. (a) Write an essay on the fundamentals of Medical Animations.

Or

(b) What are the role of narrative and gameplay in an Android Game? Explain with examples like Clash of Clans, Temple run.

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C–7751	Sub. Code
	83724

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Second Semester

Game Technology

GAME DEVELOPMENT FOR WEB

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is HTML?
2. List the canvas properties.
3. What is array?
4. How to validate password?
5. What is scrolling effect?
6. Compare XML and JSON parsing.
7. List the drawing shapes.
8. What is sprite sheet?
9. What is game UI?
10. What are listeners?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short note on semantic tag.

Or

(b) Describe the characteristics of HTML5.

12. (a) Briefly describe the advanced java script.

Or

(b) Write short note on call back functions.

13. (a) Describe web development framework.

Or

(b) Describe the data handling systems.

14. (a) Write short note on game play programming.

Or

(b) Discuss the Collison detection.

15. (a) Describe the role of controlled game elements.

Or

(b) Write short note on futures of user interface in game.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the different tags used in web development.

Or

(b) Explain the application of canvas in web construction.

17. (a) Explain slide scripting and manipulation for data.

Or

(b) Explain the validation of data in detail.

18. (a) Explain the canvas game development in detail.

Or

(b) Explain the application of keyboard and mouse for game interaction.

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C–7752	Sub. Code
	83731

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Third Semester

Game Technology

GAME DEVELOPMENT FOR MOBILE

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Arrays.
2. What is Threading?
3. What are the functions of string class?
4. What is the purpose of dynamic binding?
5. What is overloading with example?
6. Name two mobile flatforms.
7. Define User Interface Design.
8. What is IDE?
9. What do you mean by viewport?
10. What is game Texture Atlas?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Compare overloading with over riding.

Or

(b) What are the tokens in Java? Explain.

12. (a) Describe on IDE interface.

Or

(b) Write notes on Android operating system.

13. (a) What is deployment while developing a mobile application?

Or

(b) What is the meaning of manifest file? Where it gets stored?

14. (a) What are frameworks in game development? Explain.

Or

(b) How can sprites be used for animation? Explain.

15. (a) Write notes on particle effects.

Or

(b) Write notes on handling sensors.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) What are the main steps in developing a mobile application? Explain it in detail.

Or

(b) Explain the role of mobile application in software intensive systems.

17. (a) Extend the role and benefits of mobile platforms in game development.

Or

(b) What are the different types of layouts in android? Explain it in detail.

18. (a) Summarize the stages of game lifecycle with example.

Or

(b) Explain how to add gravity and other physical elements during game development.

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C–7753	Sub. Code
	83732

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Third Semester

Game Technology

MODELING AND TEXTURING

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define texture.

2. What is solid color texture?

3. What is a roughness map?

4. What is UV texture editor?

5. What is spotlight in Maya?

6. Define batch render.

7. Define blender.

8. What is body topology?

9. What do you mean animated mesh?

10. What are the basic colors of a map?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write notes on painting textures.

Or

(b) How to create a door texture.

12. (a) Describe on ambient map.

Or

(b) Write notes on texture nods.

13. (a) Explain three point lighting.

Or

(b) Elaborate on colour theory.

14. (a) Write notes on Low poly vehicles.

Or

(b) Write about render layers.

15. (a) What is 3d character modelling?

Or

(b) Write notes on body proportion.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the types of texture in 3d asset development.

Or

(b) Write notes on :

(i) Surface luminance in texture

(ii) Modular design

17. (a) Extend the role and benefits of texture in digital modeling.

Or

(b) Write notes on:

(i) Ambient Map

(ii) Character skin study

18. (a) Summarize the stages of 3d asset development with suitable example.

Or

(b) Explain the basics of character modelling in game development.

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C–7754	Sub. Code
	83733

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Third Semester

Game Technology

GAME DEVELOPMENT USING ENGINE – II

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define game engine.

2. What is binary space partitioning?

3. What are texture graphics?

4. What is AI controller?

5. What are decals?

6. What is Blueprint class?

7. Mention the importance of GPU.

8. Highlight the function of health bar in a video game.

9. What is a pop-up message?

10. Name any two engine for game development.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Compare mesh with model.

Or

(b) What is content browser? Explain.

12. (a) Describe about mesh animation.

Or

(b) Write notes on blueprint.

13. (a) Explain about floating UI widget component.

Or

(b) Describe on designing of main menu in video games.

14. (a) What are check point in game development? Explain.

Or

(b) Write about timer in a basic game engine.

15. (a) Write notes on moving platform.

Or

(b) What is a level block out? Explain.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the steps to create material and diffuse texture in a game engine.

Or

(b) Explain the various concepts of the game engine.

17. (a) Explain the steps to create a basic cinematic cut scene in game engine.

Or

(b) Elaborate on unreal game engine development.

18. (a) How to optimise the game with respect to android platform? Explain.

Or

(b) Explain the steps to create Al and enemy basics.

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C–7755	Sub. Code
	83734

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

Third Semester

Game Technology

GAME PSYCHOLOGY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Psychology.

2. What is personality?

3. What causes memory loss and forgetfulness in psychology?

4. What is the purpose of measuring intelligence?

5. What is emotion psychology?

6. Show an example of cognitive psychology.

7. Define game psychology.

8. What is competence in games?

9. What do you mean gamification?

10. Expand VR.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain Psychology as a Science.

Or

(b) Identify the tasks of Psychology.

12. (a) State memory process.

Or

(b) List causes of forgetting.

13. (a) Define learning and its basic conditions.

Or

(b) Explain about cognitive learning.

14. (a) Explain cognitive aspects of games.

Or

(b) What is game learning curve? Explain.

15. (a) Write notes on educational games.

Or

(b) Write notes on serious games.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Elaborate on the prospects of behaviourism.

Or

(b) Explain in detail about psychoanalysis.

17. (a) Describe short term memory and differentiate with long term memory.

Or

(b) Explain the theories of intelligence in detail.

18. (a) Explain the theories of motivation and motivational factors.

Or

(b) Describe the consequences of Game addiction and explain recovery process.

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C–6573	Sub. Code
	83743

M.Sc. DEGREE EXAMINATION, APRIL 2022.

Fourth Semester

Game Technology

ARTIFICIAL INTELLIGENCE

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Dempster.

2. Define Architecture in AI.

3. What are the tasks of AI?

4. What are the rules of AI?

5. What is fuzzy logic?

6. What are the Basic components of AI?

7. What are the certainty factors in AI?

8. State Intelligent agents in AI.

9. Define Backtracking.

10. What is the role of Way point in AI?

Part B (5 × 5 = 25)

Answer **all** questions

11. (a) List out the merits of AI.

Or

(b) Discuss how strategically AI is used in games.

12. (a) What is meant by Means- end analysis?

Or

(b) Write about generate and test algorithm.

13. (a) What are the ways to formulate the problem?

Or

(b) What are the roles of expert systems in creating games?

14. (a) Explain the role of strips in AI.

Or

(b) Explain basic plant generation systems in AI.

15. (a) What is Heuristics search?

Or

(b) What are the characteristics of Meta knowledge?

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Give the structure of an agent in an environment. List the criteria to measure the performance of search strategies.

Or

(b) Differentiate forward and backward chaining.

17. (a) Give an example for real world end toy problem. What is important for task environment?

Or

(b) What are the components of the problem? List the steps involved in problem solving technique.

18. (a) Write A* algorithm and briefly discuss the various observations about algorithm.

Or

(b) Explain the various problem solving and problem reduction methods with algorithm and examples?

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C–6574	Sub. Code 83744

M.Sc. DEGREE EXAMINATION, APRIL 2022.

Fourth Semester

Game technology

LEVEL DESIGN

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define level design.

2. What is level design layout?

3. Define height map.

4. Comment on mainstream media.

5. What is playability testing?

6. What is symmetrical level design?

7. Define visual presentation.

8. Define cookie lighting.

9. What is the role of level designer?

10. Who is called indie developer?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on level design mock up.

Or

(b) Discuss about the significance of level design analysis.

12. (a) Explain how to make bumps and bits to the models in games.

Or

(b) How to assign and modify wind flow in action video games?

13. (a) Explain how to create level mock up.

Or

(b) Write short notes on standard difficulty curve.

14. (a) Identify the characteristics of shadows and occlusion shaders.

Or

(b) Explain the significance of lighting in games.

15. (a) What is the use of multiplayer map in level design software?

Or

(b) Describe the process of making a map for RPG game.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Write an essay on Level based games and its uniqueness.

Or

(b) Explain in detail about the use of height map and normal map in level design software.

17. (a) Explain the different types of lights.

Or

(b) What are the basic steps involved in drawing the difficulty curve? Explain.

18. (a) Discuss about the use of ambient light in game environments.

Or

(b) Write an essay on the various formats of Level Design Document.

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C–6575	Sub. Code
	83745

M.Sc. DEGREE EXAMINATION, APRIL 2022.

Fourth Semester

Game Technology

RESEARCH METHODOLOGY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is sampling error?

2. What is meant by scientific method?

3. Define Sample

4. What are the basic sources of data collection?

5. Define hypothesis

6. List the types of hypothesis.

7. Define experimental research.

8. What do you understand by structured questionnaire?

9. How criticism in games is important?

10. Define the term "Central tendency".

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Briefly explain the process of Research.

Or

(b) What are the features of good research?

12. (a) Explain the process of designing a questionnaire

Or

(b) Write the advantages and disadvantages of secondary data.

13. (a) What are the characteristics of hypothesis?

Or

(b) What is probability and non-probability sampling?

14. (a) Explain the types of research report.

Or

(b) Write a brief note on computer ethics.

15. (a) What is interpretation of data? Explain its significance.

Or

(b) What is research Problem? Explain the steps in formulating the research problem.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Differentiate between qualitative and quantitative research.

Or

(b) Compare Probability and Non probability sampling techniques.

17. (a) Explain the various stages for preparing the data for research analysis.

Or

(b) What is a report and explain its purpose in research?

18. (a) Explain the various sources of developing hypothesis.

Or

(b) What are the essentials of a good research design?

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