(Pages : 3) **H – 1749**

Reg. No. : .....

Name : .....

Third Semester B.Sc./B.C.A Degree Examination, October 2019

Career Related FDP under CBCSS

Group 2 (b) — Computer Science / Computer Applications

Core Course

CS 1345 / CP 1343 — DATABASE MANAGEMENT SYSTEMS

(2018 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A (Very Short Answer Type)

(One word to maximum of **1** sentence, Answer **all** questions) :

1. Define DBMS.
2. What is known as degree of the table?
3. What are alternate keys?
4. Define ER model.
5. What are attributes?
6. What does physical security mean?
7. What does DML stand for?

P.T.O.

8. What is the basic syntax for INSERT statement?

9. Define relational calculus.

10. Expand BCNF.

(10 × 1 = 10 Marks)

SECTION – B (Short answer)

[Not to exceed **1** paragraph, answer any **eight** questions. Each question carries **2** marks]

11. What do you meant by domain of an attribute?

12. Describe primary key of a relation.

13. Write any four standard ORACLE data types.

14. Describe many-to-one relationship in ER diagram.

15. List out the security issues regarding maintenance.

16. What are integrity constraints?

17. What is the basic syntax for creating a table?

18. Write a short note on UNIQUE constraint in SQL.

19. What is the use of DELETE command in SQL? Give its syntax.

20. Discuss the axiom of Pseudo-transitivity.

21. What is first normal form?

22. When to say that a decomposition is lossless?

(8 × 2 = 16 Marks)

SECTION – C (Short essay)

[Not to exceed **120** words, answer any **six** questions. Each question carries **4** marks.

23. Explain the concept of foreign key.

24. Write any four reasons for the failure of the INSERT operation.

25. How to identify entities in ER diagrams?

26. Compare one-to-one relationships and many-to-many relationships with examples

27. What are the guidelines for designing a secure system?

28. Discuss functional dependency with example.

29. Discuss different comparison operator used in WHERE clause with examples.

30. Write in detail about lossy decomposition.

31. Discuss the objectives of the normalization process.

(6 × 4 = 24 Marks)

SECTION – D (Long essay)

Answer any **two** questions. Each question carries **15** marks.

32. Discuss UNION, DIFFERENCE, and CARTESIAN PRODUCT operations on relations with example.

33. Draw an ER diagram for Banking transaction.

34. Explain in detail different relational operators in relational algebra.

35. Explain second normal form and third normal form in detail.

(2 × 15 = 30 Marks)

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Reg. No. : .....

Name : .....

Third Semester B.Sc./B.C.A. Degree Examination, October 2019

Career Related FDP under CBCSS

Group 2(b) – Computer Science/Computer Applications

Core Course

CS 1343/CP 1342 OPERATING SYSTEMS

(2018 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

[Very Short Answer type]

(**One** word to maximum of **one** sentences, Answer **all** questions)

1. Define operating system.
2. Which state of a process is called ready state?
3. What is device queue?
4. What is known as race condition?
5. What is a safe state?
6. What is the use of banker's algorithm?
7. An address generated by the CPU is commonly referred to as

8. What is worst-fit?

9. What is file seek?

10. What is latency time?

(10 × 1 = 10 Marks)

SECTION – B

[Short answer]

[Not to exceed **one** paragraph, answer **any eight** questions. Each question carries **2** marks]

11. Explain the layered approach to operating system structure.

12. Differentiate the role of long term scheduler and short term scheduler?

13. What is a dispatcher?

14. What is resource-allocation graph?

15. What is starvation?

16. How process termination causes to deadlock recovery?

17. What is the advantage of dynamic loading?

18. Differentiate internal fragmentation and external fragmentation.

19. What is access matrix?

20. What are the operations that can be performed on a directory?

21. What are the advantages of Indexed allocation?

22. How free-space is managed using bit vector implementation?

(8 × 2 = 16 Marks)

SECTION – C

[Short Essay]

[Not to exceed **120** words, answer **any six** questions. Each question carries 4 marks]

23. Explain different operating system services.
24. What are the different categories of system programs?
25. Write a note on process control block.
26. What are the solutions to critical-section problem?
27. Write a note on deadlock detection techniques.
28. Explain swapping in memory management.
29. What is Demand Paging? Discuss its advantages.
30. Explain different file access methods.
31. What is meant by polling?

(6 × 4 = 24 Marks)

SECTION – D

[Long Essay]

[Answer **any two** questions. Each question carries **15** marks]

32. Discuss the following scheduling algorithms with example.
    (a) FCFS scheduling
    (b) Priority scheduling
    (c) Multilevel queue scheduling
33. Describe deadlock prevention strategies in detail.
34. What is segmentation? Explain segmentation architecture in detail.
35. Explain the different disk scheduling algorithms with examples.

(2 × 15 = 30 Marks)

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Reg. No. : .....

Name : .....

Third Semester B.Sc./B.C.A. Degree Examination, January 2019
Career Related FDP under CBCSS
Group 2(b) – Computer Science/Computer Applications &
Group 2(a) Physics & Computer Applications
Core Course/Vocational
CP 1342/CS 1343/PC 1371
OPERATING SYSTEMS
(2014 Admn. Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

(Very Short Answer Type)

One word to maximum of **one** sentences, answer **all** questions. **(10×1=10 Marks)**

1. How are operating systems designed in general ?
2. What does a time-sharing operating system require ?
3. How is a job different from a process ?
4. Why is the short-term scheduler called as CPU scheduler ?
5. Mention the three requirements to be fulfilled to solve the problem of critical section.
6. When is a set of processes is said to be in a deadlocked state ?
7. Give the use of base and limit registers.
8. Give the difference between physical and logical address space.
9. What is thrashing ?
10. What does boot-control block contain ?

P.T.O.

SECTION – B
(Short Answer Type)

Not to exceed **one** paragraph, answer **any eight** questions. **Each** question carries **two** marks. **(8×2=16 Marks)**

11. Distinguish between real-time operating system and parallel operating system.

12. Define the term : degree of multi-programming.

13. Define CPU burst and I/O burst.

14. Define inter-process communication.

15. Explain mutual exclusion.

16. How do you detect deadlock when there is single instance of each-resource type ?

17. What are the two factors to depend when we invoke deadlock detection algorithm ?

18. Explain roll-out, roll-in swapping policy. What does it require ?

19. Distinguish between global and local page replacement algorithms.

20. List the attributes of a file.

21. How is indexed allocation advantageous than linked allocation ?

22. Give the RAID structure and mention its uses.

SECTION – C
(Short Essay Type)

Not to exceed **120** words, answer **any six** questions. **Each** question carries **four** marks. **(6×4=24 Marks)**

23. Briefly explain the basic functions of operating systems.

24. Give the importance and contents of process control block.

25. Distinguish between preemptive and non-preemptive scheduling schemes.

26. Describe the Peterson's solution to the problem of critical section.

27. Discuss the importance of Resource Allocation Graph.

28. Explain FIFO page replacement.

29. Explain the direct access method of a file.

30. Explain the problem of external fragmentation in continuous allocation. How is it solved ?

31. List various RAID levels. How do you select a RAID level ?

SECTION – D
(Long Essay Type)

Answer **any two** questions. **Each** question carries **15** marks. **(2×15=30 Marks)**

32. Explain Round-Robin (RR) CPU scheduling algorithm in detail. How is it different from FCFS algorithm ?

33. Explain Banker's algorithm to avoid deadlocks.

34. Explain Paging memory management scheme in detail using diagrams.

35. Describe the common schemes of defining logical structure of a directory.

(Pages : 3) **F – 4260**

Reg. No. : .....

Name : .....

Third Semester B.C.A. Degree Examination, January 2019
Career Related First Degree Programme Under CBCSS
Computer Applications
Core Course
CP 1344 : PROGRAMMING IN JAVA
(2014 Admn. Onwards)

Time : 3 Hours Max. Marks : 80

PART – A

(Very Short Answer Type)

Each question carries **1** mark. **(10×1=10 Marks)**

1. What are the logical operators in Java ?
2. What is class ?
3. What is the initial name of Java ?
4. How to declare constants in Java ?
5. What is Exception class in Java ?
6. Write a note on URL.
7. Which is the class that is inherited by all java classes ?
8. Expand JDBC.
9. Which is the first method to get executed during the life cycle of an Applet ?
10. Which is the function to insert an image into an applet ?

P.T.O.

PART – B

(Short Answer Type)

Answer **any eight** questions. **Each** question carries **2** marks. **(8×2=16 Marks)**

11. Explain 2-Dimensional arrays in Java.
12. Explain the different attributes used in applet tag.
13. Explain how to prevent a class from inheriting its property .
14. Write a note on Thread class.
15. Show an example to implement throw statement in Java.
16. Write a simple Applet to write a message.
17. Why Java programs are secured ?
18. Explain the drawString() function in Graphics package.
19. Write a note on OutputStream.
20. Explain Textfieldclass in Java.
21. What is the difference between the paint and repaint method ?
22. Explain statement interface in JDBC.

PART – C

(Short Essays)

Answer **any six** questions. **Each** question carries **4** marks. **(6×4=24 Marks)**

23. What is the significance of superkeyword ?
24. Write a note on IO package.
25. Write a note on arrays in Java.
26. Explain the keywords try, catch and finally in Java.
27. Write a complete program to implement event handling.

28. Explain abstract class in Java.

29. Write an applet program to implement ActionListener.

30. Write a note on java.applet package.

31. Explain any four subclasses of Exception class.

PART – D

(Long Essay)

Answer **any two** questions. **Each** question carries **15** marks. **(2×15=30 Marks)**

32. Explain the following :
    a) JVM.
    b) String class.
    c) Import statement.
    d) Continue.
    e) Final Keyword.

33. Explain Applet programming.

34. Explain with a program how to retrieve data from a database.

35. Explain features of Java programming.

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Reg. No. : .....

Name : .....

Third Semester B.C.A. Degree Examination, October 2019

Career Related FDP under CBCSS

Group 2(b) – Computer Applications

Core Course

CP 1344 : PROGRAMMING IN JAVA

(2014-17 Admissions)

Time : 3 Hours Max. Marks : 80

SECTION – A (Very Short Answer Type)

One word to maximum of **One** sentence. Answer **all** questions. Each question carries **1** mark.

1. Expand AWT.
2. Define garbage collection ( ).
3. Define JDBC Driver.
4. Define Exception.
5. Define bytecode.
6. Write any two methods for creating a thread.
7. Define an event in Java.

P.T.O.

8. ———————— method is used to extract a character from a string.

9. ———————— is an architecture for both using and building components in Java.

10. ———————— is used to find out whether a thread is still running or not.

(10 × 1 = 10 Marks)

SECTION – B (Short Answer Type)

Not to exceed **One** paragraph. Answer any **eight** questions. Each question carries **2** marks :

11. Write a short note on synchronization.

12. Write short note on thread priority.

13. What is the purpose of commit statement?

14. Write a Java program to illustrate single level inheritance?

15. Write about any two methods in button class.

16. Write the syntax of try... catch statement?

17. What is the difference between the methods notify( ) and notifyall( )?

18. What is package? Where it can be used?

19. Differentiate '==' and equals( ) in String methods.

20. Write a note on encapsulation and polymorphism.

21. Explain life cycle of a thread.

22. Write a note on Random Access File.

(8 × 2 = 16 Marks)

SECTION – C (Short Essay)

Not to exceed **120** words. Answer any **six** questions. Each question carries **4** marks :

23. Explain throw, throws and finally.

24. Write a program to implement multilevel inheritance.

25. Explain features of java.

26. Explain multithreading in Java with example.

27. Explain statement classes provided by JDBC.

28. Write a program to implement package.

29. Compare method overloading and method overriding.

30. Explain the event listeners in Java.

31. Explain any four graphics methods.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. Each question carries **15** marks.

32. Explain inheritance with suitable example.

33. Explain control statements in Java.

34. Describe in detail about exception handling in Java.

35. Explain JDBC Drivers.

(2 × 15 = 30 Marks)

(Pages : 3) **H – 1748**

Reg. No. : .....

Name : .....

Third Semester B.Sc./B.C.A. Degree Examination, October 2019

Career Related FDP Under CBCSS

Group 2(b) — Computer Science/Computer Applications

Core Course/Complementary Course

CS 1344/CP 1331 : VALUE EDUCATION

(2018 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

Write short answers to the below **ten** *questions in* **one** or **two** sentences. **Each** question carries **1** mark.

1. What is the aim of army attachment programme.

2. What is self-esteem?

3. How many hours the students are supposed to involve in NSS activities in an academic year?

4. When was the NCC of Independent India Inaugurated?

5. What is the qualification for joining NCC?

6. What does the colour Red depicts in the NCC Crest?

7. Which are the geophysical natural disasters?

8. What is a hazard?

9. What is the most common organ donation?

10. What is a VCA?

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** questions in not exceeding one paragraph each. **Each** question carries **2** marks.

11. Write a note on the literacy programme of NSS.

12. Write a paragraph on the adoption of welfare institutions by NSS.

13. What is a NCC Company?

14. List out any four benefits of joining NCC.

15. List some social service and community activities carried out by NCC.

16. Write about youth exchange programme.

17. Write about (a) TSC and (b) Nau Sainik Camp.

18. Name the five pillars of resilience.

19. How do you define a hazardous material? Explain the types.

20. What are the major psychological impacts of disaster?

21. How is evaluation of donor eligibility done in organ donation?

22. What are the common causes of Corneal blindness?

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions in not exceeding **120** words. Each question carries **4** marks each.

23. Examine the national youth policy.

24. What are the suggestions given for selection of slums to be adopted by NSS?

25. Classify stress.

26. What are the various types of Camps in NCC?

27. How is the selection process for YEP done?

28. List out some of the causes of earthquake.

29. Discuss the differential impact of flood in terms of caste and class.

30. What are the legal aspects of a registered donor?

31. What are the three ethical principles which govern the organ allocation?

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions in not exceeding **four** pages each. **Each** question carries **15** marks.

32. List the various Youth Development Programmes at the National level and explain them in short.

33. Write in brief the activities undertaken in NCC.

34. Discuss the four phases of disaster management in detail.

35. Write a note on the various issues related to organ transplantion.

(2 × 15 = 30 Marks)

(Pages : 2) **F – 4258**

Reg. No. : .....

Name : .....

Third Semester B.C.A. Degree Examination, January 2019
Career Related FDP under CBCSS
Group 2(b) : COMPUTER APPLICATIONS
Core Course
CP1341 : Computer Networks
(2014 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A
(Very Short Answer Type)

One word to maximum of **one** sentence. Answer **all** questions. **Each** question carries **one** mark. **(10×1=10 Marks)**

1. Explain pure ALOHA.
2. What is ARQ ?
3. CSMA stands for.
4. What is Simplex transmission mode ?
5. What is bandwidth ?
6. What is Full Duplex transmission mode ?
7. Define flow control.
8. What is the use of Switch ?
9. What is datagram ?
10. Write the use of SMTP.

SECTION – B
(Short Answer Type)

Not to exceed **one** paragraph. Answer **any eight** questions. **Each** question carries **two** marks. **(8×2=16 Marks)**

11. Which are the key characteristics of optical fiber cable ?

P.T.O.

12. Which are key elements of communication model ?
13. Explain Radio Waves.
14. Explain Bridge.
15. Write short notes on CRC.
16. Explain bit oriented framing.
17. Explain UDP segment header.
18. Why do you need error detection ?
19. Explain Simplest Protocol for Noiseless Channel.
20. Describe Ethernet.
21. Explain about DNS.
22. Define Piggybacking.

SECTION – C
(Short Essay)

Not to exceed **120** words. Answer **any six** questions. **Each** question carries **four** marks. **(6×4=24 Marks)**

23. Explain about network hardware in detail.
24. Explain different Transmission modes in detail.
25. Explain sliding window protocols.
26. Differentiate between switch and router.
27. Write a note on file transfer protocol.
28. Explain leaky bucket algorithm.
29. Explain IP in detail.
30. Explain TCP header in detail.
31. How performance is improved in CSMA/CD protocol compared to CSMA protocol ?

SECTION – D
(Short Essay)

Answer **any two** questions. **Each** question carries **15** marks. **(2×15=30 Marks)**

32. Explain computer networks. What are the advantages and disadvantages of computer network ?
33. Explain ISO-OSI reference model in detail.
34. Discuss open loop and closed loop congestion control.
35. Explain the different transmission mediums used in networks with suitable examples.

(Pages : 3) **H – 1756**

Reg. No. : .....

Name : .....

Third Semester B.C.A. Degree Examination, October 2019

Career Related FPD Under CBCSS

Group 2(b) – Computer Applications

Core Course

CP 1341 : COMPUTER NETWORKS

(2014 – 2017 Admn)

Time : 3 Hours Max. Marks : 80

SECTION – A (Very Short Answer Type)

One word to maximum of **one** sentence, Answer **all** questions.

1. What is a LAN?
2. What is an even parity?
3. DNS stands for?
4. What is remote login?
5. What is a bridge?
6. What is a frame?
7. What is a baud rate?
8. Define FTP.

P.T.O.

9. What is a PDU?

10. What is a datagram?

(10 × 1 = 10 Marks)

SECTION – B (Short Answer Type)

Not to exceed **one** paragraph, answer any **eight** questions. **Each** question carries **2** marks.

11. Explain different types of data flow in data communication.

12. What are the network design goals?

13. What is meant by synchronisation?

14. What is a packet? What is its role in a network?

15. What is point to point connection?

16. What is dialog control?

17. What is error detection? Explain any one error detection algorithm.

18. Describe IP protocol.

19. Explain ALOHA protocol.

20. What is message switching?

21. What is token management?

22. What is noiseless channel protocol? Explain.

(8 × 2 = 16 Marks)

SECTION – C (Short Essay)

Not to exceed **120** words, answer any **six** questions. **Each** question carries **4** marks.

23. What are the advantages of fiber optic transmission?

24. Explain collision detection with reference to CSMA.

25. What is a hamming code? What is its use?

26. Explain the working of token ring in a network.

27. Explain process to process delivery mechanism.

28. Explain distance vector routing.

29. What is framing?

30. Explain circuit switching.

31. Explain TCP header of TCP/IP model.

(6 × 4 = 24 Marks)

SECTION – D (Long Essay)

Answer any **two** questions. **Each** question carries **15** marks.

32. Write a detailed note on different types of transmission media in a network.

33. Explain ISO-OSI reference model.

34. Explain different types of topologies of a network?

35. Explain the following :

    (a) Congestion Control

    (b) Error control

(2 × 15 = 30 Marks)

(Pages : 3) **H – 1759**

Reg. No. : .....

Name : .....

Third Semester B.C.A. Degree Examination, October 2019

Career Related FDP Under CBCSS

Group 2(b) – Computer Applications

Core Course

CP 1341 – COMPUTER NETWORKS AND SECURITY

(2018 Admission)

Time : 3 Hours Max. Marks : 80

SECTION A

Answer **all** questions in **one** or **two** sentences.

1. Name the five basic network topologies.
2. What are the units of frequency?
3. How does bit rate differ from baud rate?
4. What is UDP?
5. Define Full duplex.
6. Define analog transmission.
7. What is the spectrum of a signal?
8. What is the advantage of packet switching'?
9. Define Kerckhoff's principal.
10. What is symmetric key cryptography?

(10 × 1 = 10 marks)

P.T.O.

SECTION B

Answer any **eight** questions, not exceeding a paragraph of **50** words.

11. Identify the five components of a data communication system.
12. Name the advantages of optical fiber over twisted-pair and coaxial cable.
13. Explain the functions of presentation layer in OSI model.
14. Explain stop and wait ARQ.
15. Explain briefly FTP.
16. Define remote login.
17. What is router'?
18. Define computer virus.
19. Define active attacks.
20. What are the Requirement for Public Key Cryptosystem.
21. Explain cryptanalysis.
22. Define hash function.

(8 × 2 = 16 marks)

SECTION C

Answer any **six** questions, in a page of **100** words.

23. Explain consumer protection act.
24. Explain the significance of satellite communications.
25. Distinguish between synchronous and asynchronous transmission.
26. Discuss various error control techniques.

27. Explain about bridge, hub, switch and router.

28. Explain web security

29. Explain substitution ciphers with example.

30. Distinguish between conventional signature and digital signature.

31. Explain multiple DES.

(6 × 4 = 24 marks)

SECTION D

Answer any **two** questions, not exceeding **4** pages.

32. Explain the working digital signature.

33. What are the different types of sliding window protocol? Explain.

34. Explain the concept of client server model with examples.

35. Explain public key cryptography and RSA algorithm.

(2 × 15 = 30 marks)

———————