Subject Code : VI/BCA/6E3

Booklet No. A

Date Stamp .....

.....

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce / .....) Exam., **2017**

Subject .....
Paper .....

INSTRUCTIONS TO CANDIDATES

1. **The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.**
2. **This paper should be ANSWERED FIRST and submitted within 1 (one) Hour of the commencement of the Examination.**
3. **While answering the questions of this booklet, any cutting, erasing, over-writing or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.**

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce / .....) Exam., **2017**

Roll No. .....
Regn. No. .....

Subject .....
Paper .....

Descriptive Type
Booklet No. B .....

Signature of Scrutiniser(s)

Signature of Examiner(s)

Signature of Invigilator(s)

2 0 1 7

(6th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA–6E3

(Fundamentals of TCP/IP)

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

I. Choose the correct answer by putting a Tick (✓) mark in the brackets provided : 1×10=10

1. The authority responsible for assigning IP addresses and managing domain name space is

   (a) ISOC ( )

   (b) IETF ( )

   (c) IESG ( )

   (d) IANA ( )

2. Which one of the following is not a characteristic of TCP/IP?

   (a) Higher error rate handling ( )

   (b) Low data overhead ( )

   (c) Good failure recovery ( )

   (d) Platform dependence ( )

3. In which class of IP, the host ID and Network ID have the same number of octets?

   (a) Class A ( )

   (b) Class B ( )

   (c) Class C ( )

   (d) Class D ( )

4. The value of Time to Live (TTL) in an IP header is typically set to

   (a) 3 to 5 seconds ( )

   (b) 10 to 20 seconds ( )

   (c) 15 to 30 seconds ( )

   (d) 20 to 30 seconds ( )

5. In FTP, the control port is

   (a) 20 ( )

   (b) 21 ( )

   (c) 22 ( )

   (d) 23 ( )

6. Which one of the following devices operates at OSI layer 4 to 7?

   (a) Gateway ( )

   (b) Bridge ( )

   (c) Router ( )

   (d) Switch ( )

7. The overall size limitation of RIP packet is

   (a) 128 octets ( )

   (b) 64 octets ( )

   (c) 512 octets ( )

   (d) 1024 octets ( )

8. Which one of the following is not the router of OSPF network?

   (a) Internal router ( )

   (b) Area border router ( )

   (c) Backbone router ( )

   (d) Boundary router ( )

9. The port number 79 is used by

   (a) finger ( )

   (b) whois ( )

   (c) FTP ( )

   (d) UDP ( )

10. First email was created in 1971 by

    (a) Newman Ray ( )

    (b) Ray Tomlinson ( )

    (c) Bolt Tomlinson ( )

    (d) Newman Bolt ( )

II. State whether the following are *True (T)* or *False (F)* by putting a Tick (✓) mark : 1×5=5

1. The epitome of linked state routing protocol is routing information protocol (RIP).

(T / F)

2. TCP/IP is not an open communication.

(T / F)

3. The OSI reference model was developed by international standard organization.

(T / F)

4. The IP address which is reserved for software loopback is 127.0.0.0.

(T / F)

5. The full form of BITNET is because its time network.

(T / F)

III. Answer the following questions : 2×5=10

1. What is unicast? How does it differ from multicast?

2. Describe how a routing loop can form in a network with three nodes.

3. What are the functions of inget and input FTP commands on Unix OS?

4. Differentiate between intranet and extranet.

5. What are subnetting and supernetting?

★★★

2017

(6th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA–6E3

(Fundamentals of TCP/IP)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

The figures in the margin indicate full marks for the questions

1. *(a)* What is FTP? Explain the role of control port in active mode FTP. 3+7=10

Or

(b) What is Telnet? Which TCP port will the Telnet server listen? Explain the different -utilities available in Linux. 2+1+7=10

2. *(a)* What is TCP? How does it differ from UDP? Explain TCP header with suitable diagram. 2+2+6=10

Or

(b) Define IP address. Describe the different classes of IP addresses. Write any two differences between IPv4 and IPv6. 3+5+2=10

3. *(a)* Define router. What are the main purposes of a routing protocol? Explain distance vector routing. 2+2+6=10

Or

(b) Explain Link state routing protocol. How does it differ from distance vector routing protocol? 5+5=10

4. *(a)* What is open network? Explain the different layers in OSI reference model. 3+7=10

Or

(b) Explain the evolution of Internet. 10

5. *(a)* What is Address Resolution Protocol (ARP)? Explain the operations of ARP in Internet. 3+7=10

Or

(b) Explain the concept of Domain Name System (DNS). Explain the hierarchical organization of DNS including Top Level Domains (TLDs). 5+5=10

★★★

2017

(6th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA–6E4

(IT Act and Cyber Law)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

The figures in the margin indicate full marks for the questions

1. *(a)* Define cyber crime. Explain cyber crime committed against person, property and government. 1+9=10

Or

(b) Explain, in detail, the jurisdiction applied under Civil Procedure Code and Criminal Procedure Code in India. 10

2. *(a)* Describe Salami attack and web jacking in detail. 10

Or

(b) Explain why cyber fraud is a serious issue. How are the individuals affected with it in India?

3. *(a)* Explain three major requirements that satisfy digital signature. 10

Or

(b) Explain the steps involved for generating digital signature certificates.

4. *(a)* What are the issues that the IT Act, 2000 has implemented against data protection in India? 10

Or

(b) What are the laws amendments by the IT Act, 2000 in India?

5. *(a)* Define Intellectual Property Rights. Explain the Copyright Law and Trademark Law in detail. 10

Or

(b) Explain pecuniary jurisdiction, subject matter jurisdiction and territorial matter jurisdiction.

★★★

Subject Code : VI/BCA/6E4

Booklet No. A

Date Stamp .....

.....

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce / .....) Exam., **2017**

Subject .....

Paper .....

INSTRUCTIONS TO CANDIDATES

1. **The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.**
2. **This paper should be ANSWERED FIRST and submitted within 1 (one) Hour of the commencement of the Examination.**
3. **While answering the questions of this booklet, any cutting, erasing, over-writing or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.**

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce / .....) Exam., **2017**

Roll No. .....

Regn. No. .....

Subject .....

Paper .....

Descriptive Type

Booklet No. B .....

Signature of Scrutiniser(s)

Signature of Examiner(s)

Signature of Invigilator(s)

2 0 1 7

(6th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA–6E4

(IT Act and Cyber Law)

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(*Marks* : 10)

1. Choose the correct answer by putting a Tick (✓) mark in the brackets provided : 1×10=10

(a) In cyber law, terminology DOS means

(i) denial of service ( )

(ii) disk operating system ( )

(iii) distant operator service ( )

(iv) None of the above ( )

(b) _____ is a theft in which the internet surfing hours of the victim are used up by another person by gaining access to the login ID and the password.

(i) Logic bomb ( )

(ii) Salami attacks ( )

(iii) Internet time theft ( )

(iv) Web jacking ( )

(c) Many cyber crimses come under the Indian Penal Code. Which one of the following is an example?

(i) Sending threatening messages by email ( )

(ii) Forgery of electronic records ( )

(iii) Bogus websites ( )

(iv) All of the above ( )

(d) Under the IT Act, whoever commits or conspires to commit cyber terrorism shall be punishable with imprisonment which may extend to

(i) two years ( )

(ii) five years ( )

(iii) ten years ( )

(iv) imprisonment for life ( )

(e) The criminal reads or copies confidential or proprietary information but the data is neither deleted nor changed. This is termed as

(i) computer voyeur ( )

(ii) spamming ( )

(iii) data diddling ( )

(iv) None of the above ( )

(f) Any computer instruction, information, data or program that destroys the computer is called

(i) program ( )

(ii) forgery ( )

(iii) virus ( )

(iv) spam ( )

(g) A certifying authority may revoke a digital signature certificate issued by it

(i) where the subscriber or any other person authorized by him makes a request ( )

(ii) upon the death of the subscriber ( )

(iii) upon the dissolution of the firm or winding up of the company ( )

(iv) All of the above ( )

(h) Whoever with the intent to cause wrongful loss to the public or any person destroys any information in a computer by any means without the permission of the owner is said to

(i) commit patent law ( )

(ii) commit hacking ( )

(iii) commit web defamation ( )

(iv) commit spoofing ( )

(i) A program designed to breach the security of a computer system while ostensibly performing some innocuous function is called

(i) virus ( )

(ii) worm ( )

(iii) trojan horse ( )

(iv) certifying authority ( )

(j) Which of the following is not a licensed certifying authority?

(i) NIC ( )

(ii) IDRBT ( )

(iii) BSNL ( )

(iv) e-Mudhra ( )

2. State whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark : 1×5=5

(a) Digital signature can be used for verifying the author of the document.

(T / F)

(b) Cyber defamation is when someone publishes defamatory matter about someone in a newspaper.

(T / F)

(c) E-mail bombing refers to sending large number of e-mails to the victim resulting in victim's e-mail crashing.

(T / F)

(d) Law about publishing obscene images is found in IT Act, 2000, Section 66.

(T / F)

(e) IT Act thrust area of the policy includes increase revenues of IT and ITES industry.

(T / F)

SECTION—II

(*Marks* : 10)

3. Define the following : 2×5=10

(a) Cyber Law

(b) Patent Law

(c) Jurisdiction

(d) Identity theft

(e) E-mail spoofing

★★★

Subject Code : VI/BCA/6E6

Booklet No. A

Date Stamp .....

.....

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce / .....) Exam., **2017**

Subject .....

Paper .....

INSTRUCTIONS TO CANDIDATES

1. **The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.**
2. **This paper should be ANSWERED FIRST and submitted within 1 (one) Hour of the commencement of the Examination.**
3. **While answering the questions of this booklet, any cutting, erasing, over-writing or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.**

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce / .....) Exam., **2017**

Roll No. .....

Regn. No. .....

Subject .....

Paper .....

Descriptive Type

Booklet No. B .....

Signature of Scrutiniser(s)

Signature of Examiner(s)

Signature of Invigilator(s)

2 0 1 7

(6th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA–6E6

(Internet and E-Commerce)

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(*Marks* : 15)

I. Choose the correct answer by putting a Tick (✓) mark in the brackets provided : 1×10=10

1. E-commerce refers to the paperless exchange of business information using

   (a) e-check ( )

   (b) e-cash ( )

   (c) credit card ( )

   (d) electronic data interchange ( )

2. In which segment is eBay an example?

   (a) B2B ( )

   (b) C2B ( )

   (c) C2C ( )

   (d) None of the above ( )

3. The concept of electronic cash is to execute payment by

   (a) credit card ( )

   (b) ATM card ( )

   (c) using computers over networks ( )

   (d) e-wallet ( )

4. E-commerce is not suitable for

   (a) sale/purchase of tickets ( )

   (b) sale/purchase of mobile phones ( )

   (c) sale/purchase of branded clothes ( )

   (d) online job searching ( )

5. E-business software is best defined as to manage

   (a) sell-side e-commerce applications ( )

   (b) mobile applications ( )

   (c) internal administrative applications ( )

   (d) All of the above ( )

6. Which of the following is/are not organizational strategy/strategies?

   (a) Business unit strategies ( )

   (b) Corporate strategy ( )

   (c) Employee skills strategy ( )

   (d) Regional strategies ( )

7. RPC stands for

   (a) retail price cost ( )

   (b) remote procedural calls ( )

   (c) revenue per click ( )

   (d) None of the above ( )

8. Which of the following is not scripting language?

   (a) HTML ( )

   (b) XML ( )

   (c) PostScript ( )

   (d) JavaScript ( )

9. Mechanism to protect private network from outside attack is

   (a) firewall ( )

   (b) antivirus ( )

   (c) digital signature ( )

   (d) formatting ( )

10. Which is not related to security mechanism?

   (a) Encryption ( )

   (b) Decryption ( )

   (c) E-cash ( )

   (d) None of the above ( )

II. State whether the following are *True* (*T*) or *False* (*F*) by putting a Tick (✓) mark : 1×5=5

1. In e-commerce, communication of business depends upon individual skills.

( )

2. SET stands for Secure Electronic Transaction.

( )

3. E-checks are another form of electronic tokens.

( )

4. Multimedia contents are not important to e-business applications.

( )

5. Digital signature is scanned signature on computer.

( )

SECTION—II

(*Marks* : 10)

III. Answer the following questions : 2×5=10

1. Define transaction.

2. What is micro-payment system?

3. Differentiate between internet and intranet.

4. What is digital signature?

5. Define web services.

★★★

2017

(6th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA–6E6

(Internet and E-Commerce)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

The figures in the margin indicate full marks for the questions

1. *(a)* Define e-commerce. What are the different features of e-commerce? 2+3=5

(b) Differentiate between Traditional Commerce and e-Commerce. 5

Or

(c) Explain the limitations of e-commerce. 5

(d) Explain different models of e-commerce. 5

2. *(a)* What is anonymity? Write SET protocol for credit card. 2+3=5

(b) Explain strategies for marketing in e-commerce. 5

Or

(c) What is internet payment system? Differentiate between e-cash and e-check. 2+3=5

(d) What are virtual communities and web portal? 5

3. *(a)* Define e-business. What are different characteristics of e-business? 2+3=5

(b) What are the different levels of e-business? 5

Or

(c) Differentiate between e-business roles and e-business requirements. 5

(d) What are the important factors for implementation of e-business strategies? 5

4. *(a)* What is cloud computing? Differentiate between RCP and RMI. 2+3=5

(b) Explain e-business integration. 5

Or

(c) What are the approaches to middleware? 5

(d) Differentiate between EAI and web services. 5

5. *(a)* Differentiate between private key cryptography and public key cryptography with an example. 5

(b) Explain web site risks for e-business. 5

Or

(c) Define firewall. Explain different types of firewall. 2+3=5

(d) What is IT Act? What are the highlights of IT Act, 2000 related to e-commerce? 2+3=5

★★★

2017

(6th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA–601 (OC)

(Environment and Ecology)

(Old Course)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

The figures in the margin indicate full marks for the questions

1. *(a)* Define environment. Discuss how public awareness is necessary for our environment. 2+6=8

Or

(b) What do you understand by the term ecosystem? Explain elements of environment. 2+6=8

2. *(a)* Define food chain. Explain energy flow in an ecosystem. 2+6=8

Or

(b) What is community? Explain food web of an ecosystem. 2+6=8

3. *(a)* What is population? Write a note on demographic transition. 3+7=10

Or

(b) Explain population explosion. Write a note on concept of carrying capacity of environment. 3+7=10

4. *(a)* What do you mean by global warming? Explain the impact of global warming. 2+6=8

Or

(b) What is meant by greenhouse effect? Write a note on greenhouse gases. 2+6=8

5. *(a)* What is biodiversity? Mention the values of biodiversity. 2+6=8

Or

(b) Define Bishnoi efforts. Write a note on Chipko Movement. 3+5=8

6. *(a)* What is shifting cultivation? Write its impact on deforestation. 2+6=8

Or

(b) Define natural resources. Explain with examples the renewable and non-renewable resources. 2+6=8

★★★

Subject Code : VI/BCA/601 (OC)

Booklet No. A

Date Stamp .....

.....

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce)
Examination, **2017**

Subject .....
Paper .....

INSTRUCTIONS TO CANDIDATES

1. **The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.**
2. **This paper should be ANSWERED FIRST and submitted within 1 (one) Hour of the commencement of the Examination.**
3. **While answering the questions of this booklet, any cutting, erasing, over-writing or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.**

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce)
Examination, **2017**

Roll No. .....
Regn. No. .....

Subject .....
Paper .....

Descriptive Type
Booklet No. B .....

Signature of Scrutiniser(s) *Signature of Examiner(s)* *Signature of Invigilator(s)*

2 0 1 7

(6th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA–601 (OC)

(Environment and Ecology)

(Old Course)

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

SECTION—I

(*Marks* : 15)

1. Put a Tick (✓) mark against the correct answer in the brackets provided : 1×10=10

(a) Sunderlal Bahuguna represents

(i) Chipko movement ( )

(ii) Appiko movement ( )

(iii) Bishnoi movement ( )

(iv) All of the above ( )

(b) The term ecosystem was proposed by

(i) A. G. Tansley ( )

(ii) Ernst Haeckel ( )

(iii) Reiter ( )

(iv) E. P. Odum ( )

(c) Hot spots are areas of

(i) hot spring ( )

(ii) warm places ( )

(iii) high biodiversity under threats ( )

(iv) heat island ( )

(d) Ozone layer is being destroyed by

(i) sulphur dioxide ( )

(ii) carbon dioxide ( )

(iii) chlorofluorocarbons (CFCs) ( )

(iv) methane ( )

(e) In food chain, the largest population is that of

(i) producers ( )

(ii) decomposers ( )

(iii) secondary consumers ( )

(iv) primary consumers ( )

(f) Air pollutants mixing up with rain can cause

(i) low acidity ( )

(ii) high acidity ( )

(iii) acid rain ( )

(iv) pollutants ( )

(g) Fossil fuels and metallic minerals are

(i) renewable resources ( )

(ii) inexhaustible resources ( )

(iii) non-renewable resources ( )

(iv) None of the above ( )

(h) A species is said to be extinct when it is not seen in the wild at a stretch of

(i) 200 years ( )

(ii) 100 years ( )

(iii) 75 years ( )

(iv) 50 years ( )

(i) The magnitude of energy released by an earthquake is usually measured on

(i) ergs of energy ( )

(ii) tremor ( )

(iii) Richter scale ( )

(iv) Seismologist's scale ( )

(j) The percentage of ocean water to the percentage of total water on earth is

(i) 96% ( )

(ii) 97% ( )

(iii) 72% ( )

(iv) 80% ( )

2. State whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark : 1×5=5

(a) Total fertility rate and infant mortality rate are lower in developing countries.

(T / F)

(b) Energy flow and nutrients cycling take place through food chains and webs.

(T / F)

(c) India ranks 10th among the plant-rich countries of the world.

(T / F)

(d) Afforestation means destruction of forest.

(T / F)

(e) The most important indoor air pollutant is radon gas.

(T / F)

SECTION—II

(*Marks* : 10)

3. Write notes on the following : 2×5=10

(a) E-waste

(b) Endangered species

(c) Jhumming

(d) Zero population growth

(e) Habitat

★★★

2017

(6th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA–602 (i) (OC)

(Computer Graphics)

(Old Course)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

The figures in the margin indicate full marks for the questions

1. *(a)* What is Computer Graphics? Explain how CG helps in scientific visualization. 5

(b) What is CAD? Explain the uses of CAD in automobile industry. 5

Or

(c) Explain the workings of CRT. 6

(d) Explain the difference between Raster and Random scan monitor. 4

2. *(a)* What is Vector Calculus? Explain the difference between Cross product and Scalar product. 5

(b) What is homogenous coordinate system? Explain the benefits of using it in computer graphics. 5

Or

(c) Explain the 2-D transformation with respect to translation and rotation. 5

(d) Demonstrate Bresenham's circle algorithm using the given points : 5

(i) Radius r 1D

(ii) The initial point is (x_0, y_0) (0, 10)

3. *(a)* What is a polar coordinate system? Convert (12, 5) Cartesian value into its polar coordinate value. 5

(b) Explain the midpoint subdivision line clipping algorithm. 5

Or

(c) Explain Bezier's curve and write down the different properties. 5

(d) Explain b-spline curve and write down the different properties. 5

4. *(a)* What is a window in computer graphics? How does it differ from viewport? How do you map a window to viewport? 6

(b) Explain the different OpenGL line primitives. 4

Or

(c) What is OpenGL? Explain the OpenGL rendering pipeline technique. 5

(d) What is clipping? Explain the different clipping operations. 5

5. *(a)* Explain the main difference between Digital and Analog audio. 4

(b) Explain the different image compression methods. 6

Or

(c) What are the different multimedia hardwares? Explain. 5

(d) Explain the difference between JPEG and BMP. 5

★★★

Subject Code :
VI/BCA/602 (i) (OC)

Booklet No. A

Date Stamp .....

.....

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce / .....) Exam., **2017**

Subject .....
Paper .....

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce / .....) Exam., **2017**

Roll No. .....
Regn. No. .....

Subject .....
Paper .....

Descriptive Type
Booklet No. B .....

INSTRUCTIONS TO CANDIDATES

1. **The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.**
2. **This paper should be ANSWERED FIRST and submitted within 1 (one) Hour of the commencement of the Examination.**
3. **While answering the questions of this booklet, any cutting, erasing, over-writing or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.**

Signature of Scrutiniser(s) *Signature of Examiner(s)* *Signature of Invigilator(s)*

2 0 1 7

(6th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA–602 (i) (OC)

(Computer Graphics)

(Old Course)

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

1. Put a Tick [✓] mark in the brackets provided against the correct answer : 1×10=10

(a) The number of pixels stored in the frame buffer of a graphics system is known as

(i) resolution [ ]

(ii) depth [ ]

(iii) pixel [ ]

(iv) refresh [ ]

(b) Heat supplied to the cathode by directing a current through a coil of wire is called

(i) electron gun [ ]

(ii) electron beam [ ]

(iii) filament [ ]

(iv) cathode [ ]

(c) Shadow mask methods are commonly used in

(i) raster-scan system [ ]

(ii) random-scan system [ ]

(iii) both *(i)* and *(ii)* above [ ]

(iv) None of the above [ ]

(d) On a black and white system with one bit per pixel, the frame buffer is commonly called as

(i) pixmap [ ]

(ii) multimap [ ]

(iii) bitmap [ ]

(iv) All of the above [ ]

(e) A 2-D transformation that alters the size of an object is

(i) translation [ ]

(ii) scaling [ ]

(iii) rotation [ ]

(iv) shearing [ ]

(f) In Cohen-Sutherland line clipping algorithms, if one end-point has the outcode of 1001 and the other has the outcode of 0000, the result is

(i) trivial accepted [ ]

(ii) trivial rejected [ ]

(iii) fully accepted [ ]

(iv) None of the above [ ]

(g) A special effect in motion picture that changes one shape into another through a seamless transaction is

(i) transformation [ ]

(ii) morphing [ ]

(iii) scaling [ ]

(iv) None of the above [ ]

(h) An algorithm developed using stack for filling boundary defined region is

(i) queue-based seed fill algorithm [ ]

(ii) scan line seed fill algorithm [ ]

(iii) stack-based fill algorithm [ ]

(iv) None of the above [ ]

(i) MIDI stands for

(i) Multi-interface Digit Information [ ]

(ii) Musical Instrument Digital Interface [ ]

(iii) Musical Interface Digital Instrument [ ]

(iv) Music Instrument Digital Information [ ]

(j) JPEG is a —— compression.

(i) lossy [ ]

(ii) lossless [ ]

(iii) transcending [ ]

(iv) image [ ]

2. State whether the following statements are *True* or *False* in the brackets provided : 1×5=5

(a) The beam penetration method is used with a random scan system.

( )

(b) The b-spline curves are generalization of Bezier curves.

( )

(c) Translation changes the size of object.

( )

(d) H.261 standard is an image file.

( )

(e) MIDI is a protocol.

( )

3. Answer the following questions : 2×5=10

(a) What is digital art?

(b) State the main difference between LCD and LED.

(c) Explain rubber band method.

(d) What is the function of glClearColor?

(e) What is hypermedia?

★★★

2017

(6th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA–602 (ii) (OC)

(Quality Management and Control Systems)

(Old Course)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

The figures in the margin indicate full marks for the questions

1. *(a)* Describe the major factors of excellence in quality management. 10

Or

(b) Differentiate between TQM and ISO 9000. 4

(c) What are the salient features of TQM? 6

2. *(a)* Elaborate the different elements of just in time (JIT). 10

Or

(b) Discuss the characteristics of just in time (JIT). 10

3. *(a)* Explain the different stages of planning process cycle in quality management. 10

Or

(b) Discuss the seven steps of customer satisfaction. 7

(c) Why is Qualify Function Deployment (QFD) important? 3

4. *(a)* What are the different steps of empowerment? 5

(b) Explain the common barriers to team progress. 5

Or

(c) Discuss the approach for problem solving technique in quality management. 5

(d) Write a short note on Pareto chart. 5

5. *(a)* What are the pitfalls of ISO 9000? 5

(b) How to pursue ISO certificate? 5

Or

(c) What are the different levels of Benchmarking? 4

(d) Explain the requirements for a successful Benchmarking model. 6

★★★

Subject Code :
VI/BCA/602 (ii) (OC)

Booklet No. A

Date Stamp .....

.....

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce / .....) Exam., **2017**

Subject .....
Paper .....

INSTRUCTIONS TO CANDIDATES

1. **The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.**
2. **This paper should be ANSWERED FIRST and submitted within 1 (one) Hour of the commencement of the Examination.**
3. **While answering the questions of this booklet, any cutting, erasing, over-writing or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.**

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce / .....) Exam., **2017**

Roll No. .....
Regn. No. .....

Subject .....
Paper .....

Descriptive Type
Booklet No. B .....

Signature of Scrutiniser(s)

Signature of Examiner(s)

Signature of Invigilator(s)

2 0 1 7

(6th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA–602 (ii) (OC)

(Quality Management and Control Systems)

(Old Course)

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

1. Put a Tick (✓) mark in the brackets provided against the correct answer : 1×10=10

(a) Quality is fitness to use

(i) Juran trilogy ( )

(ii) Crosby process ( )

(iii) Deming wheel ( )

(iv) Jacob's theory ( )

(b) The components of Oakland model of TQM

(i) management commitment ( )

(ii) customer supplier chains ( )

(iii) team work ( )

(iv) All of the above ( )

(c) Which one is not 4P's in JIT?

(i) Policies ( )

(ii) People ( )

(iii) Plant ( )

(iv) Process ( )

(d) _____ referred for continuous improvement.

(i) Kanban ( )

(ii) Kaizen ( )

(iii) Kaban ( )

(iv) JIT ( )

(e) Method for working with irritated people is

(i) LEAR ( )

(ii) AIDA ( )

(iii) LIFO ( )

(iv) ADA ( )

(f) Basic need of the customer is

(i) at right cost ( )

(ii) right quality ( )

(iii) at right place ( )

(iv) All of the above ( )

(g) A graphical technique to analyze the relationship between two variables is

(i) histogram ( )

(ii) control chart ( )

(iii) scatter diagram ( )

(iv) flowchart ( )

(h) People were motivated by recognition, responsibility, achievement, advancement and the work itself

(i) Maslow's theory ( )

(ii) Crosby theory ( )

(iii) Herzberg theory ( )

(iv) Kaizen theory ( )

(i) The process for gathering information about industry is

(i) spying ( )

(ii) intelligence ( )

(iii) benchmarking ( )

(iv) intellectual ( )

(j) Certificate was awarded to organization/ industries which carried out only the last function

(i) ISO 9003 ( )

(ii) ISO 9001 ( )

(iii) ISO 9004 ( )

(iv) ISO 9002 ( )

2. State whether the following statements are *True* (*T*) or *False* (*F*) by putting a Tick (✓) mark : 1×5=5

(a) Vision and plan statement is the element of TQM.

(*T* / *F*)

(b) Conceptual, engineering and database designs are the stages for waste elimination.

(*T* / *F*)

(c) Hoshin means control or management.

(*T* / *F*)

(d) Job enlargement is the concept of empowerment.

(*T* / *F*)

(e) ISO 9004 is primarily concerned 'environmental management'.

(*T* / *F*)

3. Answer the following questions : 2×5=10

(a) Why do we need benchmarking?

(b) What are the needs of customer survey?

(c) What are the objectives of Total Quality Management (TQM)?

(d) Define 'Kanban'.

(e) What are the unique features of quality circle?

★★★

2017

(6th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA–602 (iii) (OC)

(Operation Research)

(Old Course)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

The figures in the margin indicate full marks for the questions

1. *(a)* Solve the following LP by graphical method : 10

Maximize $Z \quad 5x_1 \quad 4x_2$

subject to

$$\begin{aligned} 6x_1 \quad 4x_2 \quad & 24 \\ x_1 \quad 2x_2 \quad & 6 \\ x_1 \quad x_2 \quad & 1 \\ x_2 \quad & 2 \\ x_1, x_2 \quad & 0 \end{aligned}$$

Or

(b) Define Operation Research. Discuss the applications and scope of operations research in modern management. 2+4+4=10

2. *(a)* Solve the LP by simplex method : 10

Maximize $Z \quad 2x_1 \quad 3x_2$

subject to

$$\begin{aligned} x_1 \quad 3x_2 \quad & 6 \\ 3x_1 \quad 2x_2 \quad & 6 \\ x_1, x_2 \quad & 0 \end{aligned}$$

Or

(b) Explain how to apply *M*-method to the following LP : 10

Maximize $Z \quad 4x_1 \quad x_2$

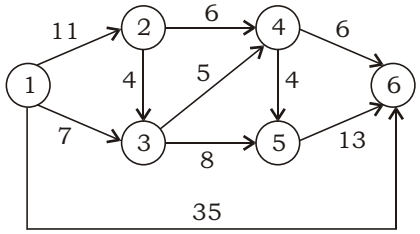
subject to

$$\begin{aligned} 3x_1 \quad x_2 \quad & 3 \\ 4x_1 \quad 3x_2 \quad & 6 \\ x_1 \quad 2x_2 \quad & 4 \\ x_1, x_2 \quad & 0 \end{aligned}$$

3. *(a)* Explain the phases in the formulation of OR model. Describe the similarities and differences of CPM and PERT construction of network. 4+6=10

Or

(b) Find the shortest path between nodes 1 and 6 from the following network diagram : 10



4. *(a)* Find the initial basic feasible solution to the following transportation problem by *(i)* minimum cost method and *(ii)* North-West corner rule : 10

				Supply
	2	7	4	5
	3	3	1	8
	5	4	7	7
	1	6	2	14
Demand	7	9	18	

Or

(b) Solve the following transportation model : 10

10 5	2 10	20	11	Supply 15
12	7 5	9 15	20 5	25
4	14	16	18 10	10
Demand 5	15	15	15	

5. *(a)* *(i)* Construct the dual to the primal problem : 4

Maximize $Z \quad 3x_1 \quad 5x_2$

subject to

$$\begin{aligned} 2x_1 \quad 6x_2 \quad & 50 \\ 3x_1 \quad 2x_2 \quad & 35 \\ 5x_1 \quad 3x_2 \quad & 10 \\ x_2 \quad & 20 \\ x_1, x_2 \quad & 0 \end{aligned}$$

(ii) Solve the following assignment model : 6

	Mow	*Paint*	*Wash*	*Cook*
John	1	4	6	3
Jim	9	7	10	9
Anil	4	5	11	7
Mori	8	7	8	5

Or

(b) Solve by dual-simplex method : 10

Minimize $Z \quad 3x_1 \quad 2x_2 \quad x_3$

subject to

$$\begin{aligned} 3x_1 \quad x_2 \quad x_3 \quad & 3 \\ 3x_1 \quad 3x_2 \quad x_3 \quad & 6 \\ x_1 \quad x_2 \quad x_3 \quad & 3 \\ x_1, x_2, x_3 \quad & 0 \end{aligned}$$

★★★

Subject Code :
VI/BCA/602 (iii) (OC)

Booklet No. A

Date Stamp .....

.....

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce / .....) Exam., **2017**

Subject .....
Paper .....

INSTRUCTIONS TO CANDIDATES

1. **The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.**
2. **This paper should be ANSWERED FIRST and submitted within 1 (one) Hour of the commencement of the Examination.**
3. **While answering the questions of this booklet, any cutting, erasing, over-writing or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.**

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce / .....) Exam., **2017**

Roll No. .....
Regn. No. .....

Subject .....
Paper .....

Descriptive Type
Booklet No. B .....

Signature of Scrutiniser(s)

Signature of Examiner(s)

Signature of Invigilator(s)

2 0 1 7

(6th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper No. : BCA–602 (iii) (OC)

(Operation Research)

(Old Course)

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

1. Put a Tick (✓) mark in the brackets provided against the correct answer : 1×10=10

(a) This innovative science of Operations Research was discovered during

(i) Civil War ( )

(ii) World War I ( )

(iii) World War II ( )

(iv) Industrial Revolution ( )

(b) Any feasible solution which optimizes (minimizes or maximizes) the objective function of the LPP is called its

(i) optimal solution ( )

(ii) non-basic variables ( )

(iii) basic feasible solution ( )

(iv) All of the above ( )

(c) What is added in the LHS of the constraint to convert the inequality to the equation?

(i) Slack variable ( )

(ii) Surplus variable ( )

(iii) Artificial variable ( )

(iv) None of the above ( )

(d) An optimum solution is considered the _____ among feasible solutions.

(i) best ( )

(ii) wort ( )

(iii) efficient ( )

(iv) None of the above ( )

(e) One can find the initial basic feasible solution by using

(i) VAM ( )

(ii) MODI ( )

(iii) Both of the above ( )

(iv) None of the above ( )

(f) For solving an assignment problem, which method is used?

(i) Hungarian ( )

(ii) American ( )

(iii) Either *(i)* or *(ii)* ( )

(iv) None of the above ( )

(g) If the value of the variable can be increased indefinitely without violating any constraints, LP has

(i) bounded solution ( )

(ii) unbounded solution ( )

(iii) infeasible solution ( )

(iv) None of the above ( )

(h) Dijkstra's algorithm determine the shortest routes between

(i) the source node and every node ( )

(ii) any two nodes ( )

(iii) the source and destination ( )

(iv) None of the above ( )

(i) Which method is used with artificial starting solution?

(i) *M*-method ( )

(ii) Two-phase method ( )

(iii) Either *(i)* or *(ii)* ( )

(iv) None of the above ( )

(j) In graphical method optimum LP solution is always associated with

(i) corner point ( )

(ii) feasible solution space ( )

(iii) Only *(i)* is correct ( )

(iv) None of the above ( )

2. State whether the following statements are *True* (*T*) or *False* (*F*) by putting a Tick (✓) mark : 1×5=5

(a) LP model with inconsistent constraints have no feasible solution.

(*T* / *F*)

(b) The amount shipped to a dummy destination represent surplus at the shipping source.

(*T* / *F*)

(c) Transportation model with *m* sources and *n* destination has *m* *n* constraint equations.

(*T* / *F*)

(d) Critical activity allows some scheduling slack.

(*T* / *F*)

(e) A dual constraint is defined for each primal variable.

(*T* / *F*)

3. Answer the following questions : 2×5=10

(a) Write the different techniques of OR.

(b) What are the basic components in LP model?

(c) Define sensitivity analysis.

(d) Explain how to balance a transportation model.

(e) Define artificial variable.

★★★