FACULTY OF ENGINEERING

B.E.(Bridge Course) II-Sem (Backlog) Examination, May/June 2018

Subject: English

Time: 3 Hours   **Max. Marks: 75**

Note: Answer all questions from Part – A & Part – B Choosing one questions from each unit

PART – A (25Marks)

A. Rewrite any Ten of the following sentences after making necessary corrections

10x 1 = 10 marks

1. He is usually going for a walk in the evening.
2. There is a temple besides my house.
3. He has been waiting since two hours.
4. Rich should help poor.
5. The wisdom is better than riches.
6. The coffee is very much sweet to drink.
7. I prefer reading books than watching television.
8. She has antique furniture in her house.
9. She is working vey hardly for the exam.
10. Can you tell me where does he live?

B. Convert the following sentences into passive voice.   **5x1=5 Marks**

    i) Hamlet was written by Shakespeare

    ii) One should keep one's promises

    iii) The boy laughed at the beggar

    iv) When did he finish the work?

    v) Everyone admires our Principal.

C. Read the following and fill in the gaps by using correct form of the words from the options given below.   **5x1=5 Marks**

notify, marked,fitarranging,provided

    a) We _____the room with an electric heater

    b) The hotess_____lunch for all the guests.

    c) He will _____for his large family by working hard.

    d) The will _____ that each child should receive half of the money.

    e) This will _____ an end to the whole episode.

D. Mark the stress on the following words   **5x1=5 Marks**

    i. Activity ii. Woodland iii. Employee iv. Biography v. Examination

Part B (Marks: 50)

Unit I

I. A) Read the following passage and answer the questions that follow.   10 Marks

Reality television is a genre of television programming which, it is claimed, presents unscripted dramatic or humorous situation, documents, actual events, and features ordinary people rather than professional actors. Although the genre has existed in some form or another since the early years of television, the current explosion of popularity dates from around the 2000. Part of the reality television's appeal is due to its ability to place ordinary people in extraordinary situations. Reality television also has the potential to turn its participants into national celebrities, in talent and performance programmers such as 'Pp Idd'. Though frequently 'Survivor' and 'Big Brother' participants also reach some degree of celebrity. Some commentators have said that the name 'reality television' is an inaccurate description of several styles of programmes included in the genre. In competition- based programmes such as 'Survivor' and other special-living environment shows like 'The Real World', the proceducers specially select the participants, and use carefully designed scenerios, events and settings to encourage particulars behavior and conflicts.

i. In the first sentence, the writer says, ' it is claimed' because

a. He agrees with the statement   b. everyone agrees with the statement

c. Some people insists on the statement   d. he wants to distance himself from the statement.

ii. Reality television.

a. He has popular since the start of television   b. has been popular since well before 2000

c. has only been popular since 2000   d. has been popular approximately since 2000

iii. Reality TV appeals to some because it.

a. Shows eligible males dating women   b. uses exotic locations

c. shows average people in exceptional Circumstances.   d. can turn ordinary people into celebrities.

iv. The participants in the reality show are

a) Professional actors   b) ordinary people   c) comedians   d) national celebrities

v. Why does the author feel that reality television is an inaccurate description?

OR

B) Bring out the central theme in 'Walter De la Mare's' 'Echo'.

Unit – II

II. A. Your are the Marketing Manager of a mobile manufacturing company, your company has launched a new model, after one year, you are required to conduct a market survey and submit performance assessment report. You can also make recommendations for boosting the sales.

OR

B. Imagine that you are the Director of the Pollution Control Board. Write a report on the rising levels of pollution in Hyderabad and suggest remedial measures.

Unit – III

III. A. Rearrange the following sentences to make a meaningful paragraph.

   a. In the west, Allied Forces had fought their way through southern Italy as far as Rome.

   b. In june1944, Germany's military position in World War II appeared hopeless.

   c. In Britian, the tast of amassing men and materials for the liberation of Northern Europe had been completed.

   d. The Red Army was poised to drive the Nazis back through Poland.

   e. The situation on the Eastern front was catastrophic.

OR

B. Describe the teacher's mood in 'The Best of the School'.

Unit – IV

IV. A As the Literary secretary, you propose to conduct a literary festival at the college, write a letter to the Principal of the college asking permission to conduct the festival, giving all the details.

OR

B. Write a job application for the post of senior manager in a MNC.

UNIT-V

V.A. Write an essay on the role of youth in the development of the society.

OR

B. The status of English in the education scenario.

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FACULTY OF ENGINEERING
B.E. I - Year (Backlog) Examination, May / June 2018

Subject : Mathematics - II

Time : 3 Hours   **Max. Marks: 75**

Note: Answer all questions from Part-A & any five questions from Part-B.

PART – A (25 Marks)

1. Solve $y = x\dfrac{dy}{dx} + \left(\dfrac{dy}{dx}\right)^2$.   (3)

2. State Newton's law of cooling and natural law of growth.   (2)

3. Find the complementary function of $(D^3 + D^2)y = \sin x$.   (3)

4. If $y_1 = e^x$ is one of the two linearly independent solution of $y'' - 2y' + y = 0$, find the second solution.   (2)

5. Find ordinary and singular points of
$$x^3(x^2 - 1)y'' - 2xy' + y = 0.$$ (3)

6. Prove that $x^2 = \dfrac{2P_2(x) + P_o(x)}{3}$.   (2)

7. Evaluate $\displaystyle\int_0^{f/2} \sin^3{}_„ \cos^5{}_„ d_„$ using Beta and Gamma functions.   (3)

8. Prove that $\dfrac{d}{dx}[x^n J_n(x)] = x^n J_{n-1}(x)$.   (2)

9. Find the Laplace transform of $f(t) = e^{-t}\sin t$.   (3)

10. Find $L^{-1}\{\log(1+\dfrac{1}{s^2})\}$.   (2)

PART – B (50 Marks)

11. (a) Solve $(\cos x + y\sin x)dx - \cos x\,dy = 0, \; y(f) = 0$.   (5)

    (b) Find the orthogonal trajectories of the family of curves $(x - c)^2 + y^2 = 1$.   (5)

12. (a) Solve $(D^2 + D + 1)y = \sin x + \cos 2x$.   (5)

    (b) Find the solution of the system of equations
$$\frac{dx}{dt} = x + y, \quad \frac{dy}{dt} = 9x + y$$ (5)

13. (a) Find the power series solution of $y' - xy = 0$ about $x = 0$.   (5)

    (b) Prove that $(2n+1)P_n(x) = (n+1)P_{n+1}(x) + nP_{n-1}(x)$.   (5)

14 (a) Prove that $\mathsf{S}(m,n) = \dfrac{\Gamma m\,\Gamma n}{\Gamma(m+n)}$. (5)

(b) Show that $J_{5/2}(x) = \sqrt{\dfrac{2}{f\ x}}\left[\dfrac{3-x^2}{x^2}\sin x - \dfrac{3}{x}\cos x\right]$. (5)

15 (a) If $L\{t\sin at\} = \dfrac{2as}{(s^2+a^2)^2}$, then evaluate. (5)

   (i) L{at cos at + sin at} and
   (ii) L{2 cos at – at sin at} using Laplace transform of derivatives.
(b) Apply Laplace transform to solve y″ - 2y′+2y=0, y(0) =1, y′(0)=1. (5)

16 (a) Solve $x\dfrac{dy}{dx} + y = y^2$. (5)

(b) Solve y″ + y = tan x by the method of variation of parameters. (5)

17 (a) Prove that $\displaystyle\int_{-1}^{1} P_n^2(x)\,dx = \dfrac{2}{2n+1}$. (5)

(b) Define error function and complementary error function prove that
   erf(x) + erf c(x)=1.

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FACULTY OF INFORMATICS

B.E. (IT) III – Semester (CBCS) (Supple.) Examination, May / June 2018
Subject: Micro Electronics

Time: 3 Hours   Max. Marks: 70

Note: Answer All Questions From Part-A & Any five Questions From Part-B.

PART–A (20 MARKS)

1. What do you understand by an ideal diode? Draw its V-I characteristics
2. Define Conductor, Insulator and Semi-conductor.
3. Why biasing is required in transistor circuit?.
4. Write four differences between BJT and JFET.
5. Define Barkhausen criteria.
6. What is sinusoidal oscillator? Define its types.
7. What is op-amp? Draw circuit diagram of Inverting and non-inverting op-amp.
8. Draw the circuit of Subtractor using op-amp.
9. What is Propagation Delay?
10. What is CMOS? Mention its advantages and disadvantages.

PART–B (50 MARKS)

11. a) Explain how P-type and N-type semiconductors can be formed.   [5]
    b) Explain the operation of Half Wave Rectifier.   [5]

12. Explain physical structure, working and V-I characteristics of enhancement type MOSFET   [10]

13. a) Explain Basic Transresistance (shunt-shunt) topology of negative feedback amplifier   [5]
    b) What is Crystal oscillator circuit and explain its working.   [5]

14. Explain the working of Mono-stable multivibrator   [10]

15. a) Explain Voltage Transfer characteristics (VTC) of an inverter   [5]
    b) Implement 2-input NAND and NOR gate using CMOS technology.   [5]

16. a) What is PN diode? Draw and explain the working of Scottky diode.   [5]
    b) Explain input characteristics of Common Emitter configuration of transistor   [5]

17. Write the short notes on any two of the following: [10]
    a) Instrumentation Amplifier
    b) Hartley oscillator
    c) Zener Breakdown

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FACULTY OF ENGINEERING

B.E. III – Semester (CBCS) (Except I.T.) (Suppl.) Examination, May / June 2018

Subject: Engineering Mathematics – III

Time: 3 Hours   **Max.Marks: 70**

Note: Answer all questions from Part A & any five questions from Part B.

PART – A (20 Marks)

1. Determine whether the function $f(z) = |z|^2$ is analytic at $z = 0$.   2

2. Evaluate $\int_C \text{Re}(z^2)dz$ from 0 to 2+4i along the line segment joining the points (0,0) and (2,4).   2

3. Find the radius of convergence of the power series $\sum \left(\dfrac{i}{4}\right)^n (z-i)^n$.   2

4. Locate the classify the singular points of $f(z) = \dfrac{1 - \cos z}{z^3 (z-1)^2}$.   2

5. Find the coefficient a, in the Fourier series of $f(x) = |\cos x|$, $-f < x < f$.   2

6. State Dirichlet's conditions.   2

7. Form a partial differential equation by eliminating the arbitrary function from $f(x^2+y^2, z) = 0$.   2

8. Solve $\sqrt{p} + \sqrt{q} = x - y$.   2

9. Solve $2u_x + 3u_y + 5u = 0$, $u(0, y) = 2e^{-y}$.   2

10. Write one dimensional wave and two dimensional Laplace equations.   2

PART – B (5x10 = 50 Marks)

11. a) Determine the analytic function $f(z) = u + iv$, where $u+v = e^x (\sin y + \cos y)$.   5

     b) State and prove Cauchy's integral formula.   5

12. a) Find the Laurent series for $f(z) = \dfrac{2z+1}{z^3 + z^2 - 2z}$ valid in the region $0 < |z-1| < 1$.   5

     b) Evaluate $\int_0^\infty \dfrac{dx}{(1+x^2)^3}$.   5

13. Find the Fourier series for the function $f(x)$ $\begin{cases} \dfrac{1}{2} + x, & \dfrac{1}{2} < x \le 0 \\ \dfrac{1}{2} - x, & 0 < x \le \dfrac{1}{2} \end{cases}$.   10

14 a) Solve $y^2 p - xy\, q = xz - 2xy$.   5

   b) Find the general solution of $[4D^2 + 4DD' + (D')^2]z = y \cos 2x$.   5

15 A rod of length ℓ with insulated sides is initially at a uniform temperature u_o. If its ends are suddenly cooled to $0^{\circ}C$ and are kept at that temperature, find the temperature distribution in the rod at time t.   10

16 a) If f(z) is analytic and |f(z)| is a non-zero constant in a domain D, show that f(z) is constant in D.   5

   b) Under the transformation $w = \dfrac{1}{z}$, find the image of $x + y = 1$.   5

17 a) Obtain the half range Fourier cosine series for $f(x) = e^x$, $0 < x < \ell$.   5

   b) Using the transformations $x^2 = u$, $y^2 = v$ reduce the partial differential equation $2xyz = px^2 y + qxy^2 + 4pq$ to clairaut's form and hence solve it.   5

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