# FACULTY OF ENGINEERING & TECHNOLOGY
**B.E./ B.Tech. (Bridge Course) I-Semester (Suppl.) Examination, December 2015**
### Subject : Engineering Physics

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

*Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.*

## PART – A (25 Marks)

1 Distinguish between Fresnel's and Fraunhoffer's diffraction.    3
2 In Newton's rings experiment the diameters of the $4^{th}$ and $12^{th}$ dark rings are 4mm and 7mm respectively. Find the diameter of the $20^{th}$ dark ring.    3
3 Match the following :

| | | | |
|---|---|---|---|
| 1) The inner most part of optical fiber | a) Refractive index of core increases towards the axis of the core | | |
| 2) In graded index fibre | b) interference | | |
| 3) Laser beam | c) core | | |
| 4) Hologram is related | d) highly coherent | | |
| | e) Electrons | | |

    A) 1-b, 2-a, 3-d, 4-c      B) 1-c, 2-a, 3-d, 4-b
    C) 1-d, 2-c, 3-a, 4-e      D) 1-b, 2-c, 3-d, 4-e    3
4 What are the characteristics of matter waves?    2
5 Calculate the packing fraction of BCC and FCC crystal.    2
6 Distinguish between conductors, semiconductors and insulators using band theory.    2
7 Distinguish between ferro, antiferro and ferri magnetic materials.    3
8 Mention few applications of Nano materials.    3
9 What are Type-I and Type-II Super conductors.    2
10 Explain the principle of Auger Process.    2

## PART – B (50 Marks)

11 a) Describe the necessary theory of interference in thin films by reflected light.    5
   b) Obtain an expression for the intensity of diffraction pattern in case of Fraunhoffer diffraction at single slit, and obtain the condition for minima of different orders.    5

12 a) Describe the construction and working principle of Nicol Prism.    5
   b) Describe the working of He-Ne laser with suitable energy level diagram.    5

13 a) What are Miller indices? Explain.    4
   b) Explain how Kronig-Penny model of solids leads to band formation.    6

14 a) What are different properties of superconductors. Explain Meissner effect.    6
   b) Distinguish soft and hard magnetic materials.    4

15 a) What is thin film? Explain thermal evaporation method of preparing thin film.    6
   b) Explain Electrical and Mechanical properties of nano-materials.    4

16 a) Define the terms numerical aperture and acceptance angle and explain how the light is propagated through optical fibre.    6
   b) Mention few applications of superconductors.    4

17 a) State and explain Hall effect.    5
   b) Write a note on LED.    5

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# FACULTY OF ENGINEERING

### B.E. I/IV (All Branches) I – Semester (New) (Main) Examination, December 2015

### Subject : English

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

**Note:** (i) Answer all questions in Part – A and any five questions from Part – B
(ii) Answer to the questions of Part – A must be at one place and in the same order as they occur in the question paper.
(iii) Missing data, if any, may be suitably assumed.

## PART – A

**I. Fill in the blanks with suitable prepositions.** ( ½ x 4= 2)
1 Why are you shouting _____ me?
2 Most of the people prefer coffee or tea _____ milk.
3 Albert Einstein was very good _____ Physics.
4 We have been waiting _____ four hours.

**II Rewrite the following sentences with necessary connections.** ( ½ x 6= 3)
1 She told us that she will attend the meeting but she didn't.
2 They have been awaiting for the chief guest.
3 Indians are not believing the politicians.
4 She is going to the office since Monday.
5 The Prime Minister went to prison to distribute sweets on Independence Day.
6 The coach and the team discussed about the failure.

**III Rewrite the following sentences with appropriate question tags.** ( ½ x 6= 3)
1 None of the opportunities was wasted.
2 Little progress has been made.
3 We have breakfast at 8 O' Clock.
4 Everybody can't come first.
5 She didn't watch the film last night.
6 These boys like cooked food.

**IV Rewrite the following sentences in reported speech.** (1 x 3 = 3)
1 He said, 'I am unwell'.
2 He said to her, 'will you listen to my suggestion?'
3 Ramesh said to her, 'Why did you sing my song?'

**V Choose the appropriate <u>ANTONYM</u> for the underlined word in each sentence from the options given below:** (½ x 6= 3)

1 He was <u>exonerated</u> from all responsibility for the accident
   a. convicted       b. acquitted       c. flee       d. commended

2 She was <u>indifferent</u> to the dangers of journey.
   a. careless       b. aloof       c. interested   d. commended

3 He is a <u>shrewd</u> politician.
   a. foolish       b. clever       c. dishonest   d. great

4  Mr. Paul took <u>voluntary</u> retirement.
   a. compulsory    b. essential       c. necessary        d. natural

5  This is a <u>barbarous</u> act.
   a. savage        b. civilized       c. inhuman          d. cruel

6  One should be <u>economical</u> in spending money.
   a. frugal            b. extravagant     c. spendthrift        d. wasteful

**VI  Match the following Idioms with the meanings:**                    **( ½ x 6= 3)**
1  a feather in your cap              (a) to speak frankly
2  break the ice                     (b) to be slavish
3  dance to one's tune               (c) a great achievement
4  beat around the bush              (d) advantages and disadvantages
5  pros and cons                     (e) to begin work
6  to call a spade a spade           (f) go round about

**Write a brief short note on following:**
**VII**    Johari window                                          (1 x 2 = 2)
**VIII**   Productivity as a feature of human communication       (1 x 2 = 2)
**IX**     Mobile etiquette                                       (1 x 2 = 2)
**X**      Nadella's opinion of Indian students                   (1 x 2 = 2)

## PART – B

1  What is significance of communication?  What are the barriers to effective communication?

2  Give an account of the three main styles of communication with appropriate examples?

3  Imagine that you want to take a car loan from State Bank of India.  Write a letter to the Chief Manager, SBI branch of your locality requesting him/her to send you all the information related to SBI car loans.

4  Assume that the cost of your education is being paid by the Bharat Engineering Limited.  The agreement is that you will serve them for five years after graduating. They a want a report on the quality of training you are receiving and the progress you have made.  Write this report, which will be circulated to the Board of Directors

5  What is the significance of 'punctuation' in written communication?  Explain any 2 uses of comma, colon and semicolon each with examples?

6  What is the vision of Satya Nadella as the CEO of Microsoft?

7  "Azim Premji is not only a great businessman but also a great philanthropist" – Discuss.

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# FACULTY OF ENGINEERING AND INFORMATICS

### B.E. I - Year (Old) Examination, December 2015

### Subject : ENGLISH

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

*Note:  Answer all questions from Part-A. Answer any FIVE questions from Part-B.*

### PART – A  (25 Marks)

**I**   Replace the underlined word in the following sentences with a suitable synonym from the options given below :

1   Mahatma Gandhi was known for his <u>meek</u> nature
    a)  courageous         b)  simple         c)  humble         d)  diligent

2   The warden was <u>civil</u> to all the prisoners
    a)  courteous         b)  gallant         c)  formal         d)  rude

**II**   Replace the underlined word in the following sentences with a suitable antonym form the options given below.

1   Very few orators make a tremendous impact on the audience inspite of <u>brevity</u> in their speeches.
    a)  lengthiness         b)  power         c)  shortness         d)  tonality

2   His behaviour was <u>absurd</u>
    a)  awkward         b)  unreasonable    c)  reasonable         d)  worthless

**III**   Write one word substitutes for the following :
    1   Someone who studies birds
    2   That which may be eaten

**IV**   Write the meaning of the following idioms.
    1   To cry over split milk
    2   To let the cat out of the bag

**V**   Write the meaning of the underlined phrasal verbs in the following sentences.
    1   She <u>broke down</u> on hearing the tragic news
    2   Please <u>carry on</u> with your work.

**VI**   Fill in the blanks with the appropriate verb forms.

    1   I _____ born in Hyderabad.
       a)  am         b)  was         c)  had been         d)  have been

    2   I _____ will inform you as soon as I _____.
       a)  Know         b)  Knows         c)  am knowing     d)  will be knowing

**VII** Convert the following into the passive voice.
    1  Calculate the money in 10 minutes.
    2  His sister gifted him a watch.

**VIII**  Change the following into the indirect speech.
    1 He said, "where is the administrative office"?
    2 She said, "the sun rises in the east".

**IX**  Fill in the blanks with a, an or the
    1  He started his empire in _____ one roomed office.
    2  Mery _____ best man win
    3  He is _____ honest officer.

**X**  Fill in the blanks with appropriate prepositions.
    1  I insist _____ perfection
    2  He deals _____ diamonds
    3  She cut the pie _____ a knife

## PART – B  (5 x 10 = 50 Marks)

1  What made Barack obama a favourite amongst Americans?

2  What is the secret of Indra Nooyi's success?

3  Write a note on the role and importance of communication.  List a few barriers of communication.

4  Write a letter of complaint to BSNL about faulty telephone billing for the month of July 2014.  Draft a response for the same.

5  Write a general report on traffic congestion in your city to the Commissioner of Police, Traffic, suggest measures to overcome traffic chaos.

6  Write a note on Johari windows and its importance in interpersonal relationships.

7  Give a detailed account of E.Mail etiquette with appropriate examples.

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