Code No. 18

FACULTY OF ENGINEERING

B.E II-Semester (Main & Backlog) Examination, May / June 2018

Subject : Business Communication & Presentation Skills

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

Note: i) Answer ALL questions in Part -A and any FIVE questions from Part -B.
ii) Answers to the questions of Part -A must be in 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 (20 Marks)

1. State whether the following statements are TRUE or FALSE (1/2 x 2 = 1)
   i) Assertive communication involves demanding that you must have things your way.
   (a) True (b) False
   ii) Communication between people of the same rank is called Diagonal Communication.
   (a) True (b) False

2. Choose the best answer from the given choices. (1/2 x 2 = 1)
   i) Johari Window is a relationship model created by two psychologists ____ Luft and _____ Ingham. Their first names are:
   a. Jo and Hari b. Joe and Harry c. Jose and Harie d. none of the above

   ii) In the Johari Window the Blind Area/Pane refers to
   a. what is known to self and seen by others
   b. what is unknown to self and seen by others
   c. What is known to self and hidden from others
   d. none of the above

3. State whether the following statements are TRUE or FALSE (1/2 x 2 = 1)
   i) Business communication is the way employees, management and administration communicate in a business context, to reach to their organizational goals.
   (a) True (b) False
   ii) Business communication involves exchanging information, preparing plans and policies, increasing employee's efficiency and solving problems.
   (a) True (b) False

4. Fill in the blanks from the given options. (1 x 3 = 3)
   i).When writing formal reports it is better to use _____
   a. the past tense to describe work completed and present tense for conclusions
   b the present tense to describe work completed and past tense for conclusions
   c. all of the above
   d. none of the above

   ii) An Agenda is a list of _____
   a. items to be purchased
   b. topics to be discussed in a formal meeting
   c. items to be sold
   d. things on a to-do list

   iii) a. When you receive a call during a formal meeting from an important client, you can_____ take the call and talk loudly so you can be heard clearly, since it is an important call
   b. disconnect the call, so as not to disturb others
   c. either call the person later or go outside the room and talk

…2

5. Keeping in mind that Persuasion skills are important in one's personal and professional life, briefly explain at least six persuasion techniques one can effectively use when interacting with others. (3 x 1 = 3)

6. Choose the correct option from the choices given. (1 x 2 = 2)
   i) The Statement of Purpose should include
      a. academic performance, research interests, and future goals
      b. every single achievement of the candidate
      c. all the minor details of the family history of the candidate
      d. none of the above
   ii) All formal letters must be written in terms of correctness, clarity, conciseness and courtesy.
      a. The above guidelines are applicable even for letters of Complaint
      b. The above guidelines are not applicable for Complaint letters since the writer is angry or upset.
      c. all of the above
      d. none of the above

7. State whether the following are TRUE or FALSE (1 x 3 = 3)
   i) When writing a Resume, it is better to use plain English and avoid professional jargon.
      a. True b. False
   ii) Persuasion calls for the skills of argument and discussion that can be used to get others to agree with us.
      a. True b. False
   iii) When sending E-mails, it is preferable to send shorter messages and informal reports as attachments.
      a. True b. False

8. Write short notes on the following (2 x 2= 4)
   i) The four stages of Team Building as proposed by Bruce Tuckman.
   ii) Important Strategies of Time Management.

9. State whether the following are TRUE or FALSE (1x 2= 2)
   i) Prepare a complaint letter in terms of three S's: state (mention the problem), substantiate (present the problem clearly, in detail) and seek a solution (suggest a specific solution).
      a. True b. False

   ii) Minutes of a Meeting describe the events of a formal meeting but they need not include a list of the participants or a statement of the issues considered by them.
      a. True b. False

PART – B (50 Marks)

11. Write brief notes on the Downward and Upward Channels of communication.
12. Explain the phases of the 'Coming together' and 'Coming Apart' sections in mark Knapp's Relationship Development model.
13. List and explain the telephone/mobile etiquette guidelines that need to be kept in mind when making or answering business calls.
14 Explain the various elements of a formal report in detail
15. Write 10 differences between Technical Writing and General writing.
16. Explain how one can effectively write an Agenda as well as the Minutes of a Meeting.
17. What are different types of GD. Explain the features of a good GD.

****

Code No. 102/S

FACULTY OF ENGINEERING

B.E. 3/4 (Civil) I-Semester (Supplementary) Examination, May/June 2018

Subject : Building Technology and Services

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

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

PART – A (10 x 2.5 = 25 Marks)

1 What are the principles of ventilation as per building bye laws?
2 Differentiate between aspect and prospect.
3 Explain the optimum time of reverberation.
4 What is meant by reverberation? Give equation to calculate reverberation time.
5 What are the essential requirements of a good trip?
6 What are the different communication services used in buildings?
7 List out different low energy materials used in green buildings.
8 Describe the necessity of green buildings.
9 Explain the procedure to draw a cone of diameter 20mm and height 50mm using AUTOCAD command.
10 What are Boolean commands?

PART – B (50 Marks)

11 a) State various objectives of building bye – laws. 5
b) Explain about data collection relating to different buildings. 5

12 a) What are the different sanitary fittings normally used in buildings? 5
b) Explain in detail about Porous Absorbents and composite type of Absorbents. 5

13 a) Write a short note on Fire resistance ion structural elements. 5
b) Discuss about difference between lift and escalator. 5

14 a) Explain in detail the process of achieving the effective heating and cooling system in green buildings. 5
b) Suggest various methods to make a building green building. 5

15 Sketch the plan of an office building facing east. Give the sizes of different rooms as 10
i) Main cabin = $6m^2$ ii) Visitors Lounge = $12m^2$
iii) Verandah = $4.5m^2$ iv) Toilets two no's = $3m^2$ each
v) Administrative office = $28m^2$
Provide Doors and windows where ever necessary with suitable dimensions.

16 a) List out different principles of planning of buildings. And explain groupings of rooms. 5
b) Discuss different design considerations for comfort in buildings. 5

17 Write short notes on the following :
i) Creation of solids in AUTO CAD -3D 5
ii) Effective water conservation systems 5

******

Code No. 115/S

FACULTY OF ENGINEERING

B.E. 3/4 (ECE) I – Semester (Suppl.) Examination, May / June 2018

Subject: Analogy Communication

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

Note: Answer all Questions from Part A and any Five Questions from Part B

PART – A (25 Marks)

1. Define complex envelope and pre – envelope of a signal (2)
2. Define modulation index with respect to amplitude modulation. Derive the power relation and efficiency in A.M. modulated wave (3)
3. In an FM system if modulation index is doubled and modulating frequency is reduced four times, what is the effect on the frequency deviation? (3)
4. Compare wideband FM and narrowband FM (2)
5. What is the difference between FM and AM receivers? (3)
6. Define image frequency (2)
7. Explain the noise bandwidth (3)
8. Define Noise equivalent temperature (2)
9. Explain the difference between Natural sampling and Flat –top sampling (3)
10. How is PDM wave converted into PPM wave? (2)

PART-B (10 x 5 = 50MARKS)

11 a) Explain the filter method for the generation of SSB-AM generation (4)
b) Derive a condition on the RC time constant in an envelope detector so that there is no diagonal clipping when the AM signal has a sinusoidal modulation to a depth m_a (6)

12 a) Give the principle of Armstrong method of frequency modulation (5)
b) An FM signal with frequency deviation of 10KHz at modulation frequency of 5 KHz is applied to two frequency multiplier connected in cascade. The first multiplier doubles the frequency and second multiplier triples the frequency. Determine the frequency deviation and the modulation index of the FM signal obtained at the second multiplier output. What is the frequency separation of the adjacent side frequencies of this FM signal? (5)

13 a) Classify AM Transmitters and explain them with block diagram (5)
b) What are the factors to be considered while selecting Intermediate frequency in radio receiver? (5)

14 a) Calculate the noise voltage at the input of television RF amplifier using a device that has a 200 ohm equivalent noise resistance and 300 ohm input resistance. The band width of amplifier is 6 MHz and temperature is 17^oC (4)
b) Derive the expression for Noise in a two stage cascaded amplifier (6)

15 a) State and prove sampling theorem for bandpass singals. (5)
b) Explain how PWM can be generated and detected (5)

16 a) With neat circuit diagram explain the working of phase discriminator type FM demodulation (5)
b) With neat block diagram explain the working of low level AM transmitter (5)

17 Write short notes on
a) Pre emphasis and De emphasis (5)
b) Double spotting (5)

****

Code No. 122

FACULTY OF ENGINEERING

B.E. 3/4 (Mech.) I-Semester (Supplementary) Examination, May /June2018

Subject : Hydraulic Machinery and Systems

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 A jet of water of 75mm diameter impinges normally on a fixed plate with a velocity of 30 m/s. The force exerted on the plate is 3
a) 3876.2N b) 3776.2N c) 3976.2N d) 3676.2N

2 The amount of work save by fitting an our vessel to a single acting reciprocation pump is 2
a) 39.20% b) 48.8% c) 84.8% d) 88.4%

3 The pump is required to recover 150 lit/sec at a head of 45m when running at 1750 rpm. The specific speed of the pump is 3
a) 18 b) 125 c) 39 d) 1260

4 Which of the following turbines is most efficient at part load operation. 3
a) Kaplan b) Propeller c) Francis d) Pelton wheel

5 The power developed by hydraulic cylinder is equals the product of it's 2
a) Force and velocity b) length and time
c) Discharge and area d) None of the above

6 The efficiency of a jet of water having a velocity of 20 m/s impinges on a series of moving vertical vanes which moves at 10m/sec is 3
a) 50 b) 40 c) 80 d) 60

7 The absolute pressure head in terms of meter of water to avoid the separation should be greater than 2
a) 2.5m b) 5m c) 7.52m d) 10.33 m

8 In centrifugal pumps cavitation is reduced by 2
a) Increasing the flow velocity b) Reducing the discharge
c) Throttling the discharge d) Reducing the suction head

9 To generate 8100 KW under a head of 81m while working at a speed of 540 rpm, the turbine of choice will be 3
a) Pelton b) Kaplan c) Bulb d) Francis

10 Identify components of hydraulic system from the following 2
a) Hydraulic pump b) Hydraulic Actuator
c) Control valves d) All the above

..2

PART – B (50 Marks)

11 A jet of water of diameter 10cm strikes a flat plate normally with a velocity of 15m/s. The plate is moving with a velocity of 6 m/s in the direction of the jet and away from the jet find the force exerted by the jet on the plate, work done by the jet on the plate per second, power and efficiency of the jet.

12 A centrifugal pump having outer diameter equal to two times the inner diameter and funning at 1000 rpm works against a total head of 40m. The velocity of flow through the impeller is constant and is equal to 2.5m/s. The vanes are set back at an angle of 400 at outlet. If the outer diameter of the impeller is 500mm and width at outlet is 50mm.
Determine : a) vane angle at inlet b) work done by the impeller on water /sec c) Manometric efficiency

13 The length and diameter of a delivery pipe of a single acting reciprocator pump are 30m and 10cm resp. and water is delivered by the pump to a tank which is 20m above the centre of the pump. The pump has a plunger diameter 15cm and stroke length of 35cm.
Determine :
a) Pressure head due to acceleration at the beginning of the delivery stroke
b) Pressure head in the cylinder at the beginning of the delivery stroke and
c) Pressure head in the cylinder at the end of the delivery stroke (Take atmospheric pressure head = 10.3 m of water).

14 Design a Pelton wheel for the following specifications :
Head = 80 m; Speed = 300 rpm; Shaft power = 103 KW; Speed ratio = 0.45; Coefficient of velocity = 0.98; overall efficiency = 80%.

15 a) What is meant by cavitation in pumps? What are the effect of cavitation?
b) Explain in brief about indicator diagram in reciprocating pumps.

16 a) Differentiate between impulse and reaction turbines
b) Derive Darcy-Weisbach's equation of flow through a pipe.

17 a) What are advantages of dimensional analysis – state five features?
b) Explain in brief about main characteristic curves in turbines.

******

Code No: 125/S

FACULTY OF ENGINEERING
B. E. 3/4 (Prod.) I-Semester (Suppl.) Examination, May/June 2018

Subject: Machine Tool Engineering

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

Note: Answer all questions of Part-A, & Answer any FIVE Questions from Part-B.

PART-A (25 Marks)

1. What is Built up Edge (BUE)? Enlist factors influence the formation of BUE.
2. How cutting fluids contribute for effective machining.
3. What do you understand by speed in turning and how is it evaluated?
4. What are the reasons for cutting tool failure?
5. How a lathe is specified?
6. What is thread chasing?
7. Sketch a drill and indicate various parts on it.
8. What is mean by differential indexing?
9. What are the advantages of canned cycle?
10. Distinguish between NC, CNC and DNC.

PART-B (50 Marks)

11. (a) Sketch Merchant circle diagram and give force relations. State the assumptions made by merchant while constructing the diagram.
    (b) How the heat is generated in metal cutting? Describe various methods used to find the chip-tool interface temperature.
12. (a) What is tool life? Mention Taylor's tool life equation. Explain all the factors affecting the tool life.
    (b) Explain any one method of measuring flank wear and crater wear.

13. (a) Explain with neat sketches the various methods of taper turning on lathe.
    (b) State the construction features of drilling machine.

14. (a) Sketch a vertical milling machine showing all the mechanisms. How the job is held on the work table of this machine?
    (b) Describe the process of cutting Bevel gears.

15. (a)Explain different types of bonds used in grinding wheels. Also specify their advantages and limitations.
    (b) Classify different types of CAPP processes. Explain any one of them with a neat sketch.

16. (a) The following data were obtained while orthogonal cutting of M.S rod of 120 mm diameter with 100 rake angle tool, cutting speed 25 m/min, feed 0.20 mm/rev, length of chip is 150 mm, cutting force 1500 N, feed force 650 N.
    Calculate:
    (i) Shear plane angle (ii) Chip thickness (iii) Chip velocity and (iv) Power required for cutting. (Missing data may be suitably assumed)
    (b) Name various cutting tools and highlight the composition, their importance and applications.
17. Write a short notes on :
    (a) Tool nomenclature
    (b) Indexing methods
    (c)Flexible Manufacturing Systems (FMS)

****

Code No: 128/S

FACULTY OF ENGINEERING

B. E. 3/4 (A.E) I-Semester (Suppl.) Examination, May / June 2018

Subject: Automotive Chassis Components

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

Note: Answer all questions of Part-A, & Answer any FIVE Questions from Part-B.

PART-A (10x2.5=25 Marks)

1 Describe briefly with diagram the flow power from engine to the rear wheels in a car?
2 Sketch a car frame (semi integral) and name its different members?
3 List the types of front Axel, draw any one?
4 Difference between Davls and Ackerman steering system.
5 Draw the lay out o Conventional steering linkage.
6 Explain differential lock.
7 What is the function of damper in suspension system?
8 What are the different types of front end suspension system?
9 Give a classification of brakes.
10 What are the advantages and disadvantages of hydraulic brakes?

PART- B (50 Marks)

11 (a) Explain about the various types of loads acting on vehicle frame with neat sketches. [5]
(b) Draw chasses layout with reference to power point locations and drives with neat sketches. [5]

12 (a) Distinguish dead Axel and live Axle [4]
(b) What do you understand by under steering and over steering? [6]

13 (a) What is propeller shaft? What are the types of propeller shafts used in vehicles ? [4]
(b)With the help of a neat diagram describe Hotchkiss drive. [6]

14 Describe the function of rear axle? And explain briefly the types of a Rear Axle. [10]

15 (a)Draw and explain the function of a stabilizer? [4]
(b) Explain the construction and working of a telescopic shock absorber [6]

16 Explain with a neat sketch of Air brakes. [10]

17 Explain the following:
(a) Centre point steering [2]
(b) Steering geometry [4]
(c) Fundamental equation for correct steering [4]

****

Code No. 135

FACULTY OF ENGINEERING

B.E. 3/4 (CSE) I - Semester (Suppl.) Examination, May/June 2018

Subject : Software Engineering

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 Why is software engineering said to be a layered technology? (3)
2 What is Process Assessment? (2)
3 What is the use of Gantt chart? Explain with example. (2)
4 What are the advantages of COCOMO-II over COCOMO? (3)
5 What do you understand by the term 'Design Quality'? (2)
6 Describe the difference between an Association and a Dependency for an analysis class. (3)
7 What are the uses of Transform Mapping and Transaction Mapping? (3)
8 Briefly explain about Decision Table. (2)
9 What are the errors that are commonly found during Unit Testing? (2)
10 Is Integration testing necessary when all modules have been Unit Tested? (3)

PART – B (50 Marks)

11 (a) What is Unified Process? Explain the various phases in it. (5)
(b) Discuss Prototyping – Based development Model by bringing out its advantages and disadvantages. (5)

12 (a) List the various tasks involved in Requirement Engineering. Explain about each task in short. (5)
(b) Explain COCOMO-II Effort Estimation method with example. List its advantages and disadvantages. (5)

13 (a) What does Behavioural model indicate? What are the steps that analyst must perform to create the model? (5)
(b) Discuss the following design concepts (i) modularity (ii) refinement (iii) Refactoring (5)

14 (a) Explain the various Architectural Styles in Detail, (or) Explain various architectural styles and patterns in detail. (5)
(b) Explain in detail the various design issues associated with User Interface Design. (5)

15 (a) What do Regression and Smoke Testing try to uncover? Explain. (4)
(b) What is meant by structural complexity of a program? Write a metric for measuring the structural complexity of a program. (6)

16 (a) What is Cyclomatic Complexity? How to compute it? Explain with the help of an example. (4)
(b) What Testing options are available at the Class level? (3)
(c) Explain about Alpha & Beta Testing. (3)

17 (a) Discuss the concept of Spiral Model proposed by Barry Boehm with the help of a diagram. List any three strengths and weaknesses of the model. (7)
(b) List any five Agile Principles and explain them in your own words. (3)

*****

Code No. 137/S

FACULTY OF INFORMATICS

B.E. 3/4 (IT) I-Semester (Supplementary) Examination, May/June 2018

Subject : Software Engineering

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	Define Software Engineering.	2
2	List the tasks involved in requirements engineering.	3
3	Define software quality.	2
4	Explain ISO 9000 quality standards.	2
5	Define coupling. List various types of coupling.	3
6	Differentiate between Risk Projection and Risk Refinement.	2
7	Explain briefly about CMMI.	3
8	Differentiate between verification and validation.	3
9	Explain about COCOMO model.	3
10	List few software risks.	2

PART – B (50 Marks)

11	a)	Explain incremental process model.	5
	b)	Explain Waterfall process model.	5
12		What is software architecture? Explain the various architectural styles.	10
13	a)	What are the impacts of software defects?	5
	b)	Explain SQA plan and goals of SQA.	5
14		What are the elements of Software Configuration Management (SCM)?	10
15	a)	What is Risk? Explain how risk is managed in software development.	5
	b)	What are proactive and reactive risks.	5
16	a)	What is RMMM? Explain RMMM plan.	5
	b)	Write about white box and black box testing.	5
17		Write short notes on :	
	a)	Software project estimation	3
	b)	Requirement analysis	3
	c)	Elements of SQA	4

******