

CP-8555

Sub. Code

21T

B.Sc. DEGREE EXAMINATION, APRIL 2018

Second Semester

Tamil

இலக்கணமும் படைப்பிலக்கியமும்

(Common for B.Sc. (Aero. Sci.)/B.Sc. (Nauti. Sci.)/  
B.Sc. (C.S)/B.Sc. (Nut. Diet))

(2016 onwards)

Time : 3 Hours

Maximum : 75 Marks

பகுதி அ

(10 × 2 = 20)

எல்லா வினாக்களுக்கும் விடை தருக.

1. முதல் எழுத்துக்கள் எவை?
2. மொழிமுதல் எழுத்துக்கள் யாவை?
3. கவிதையின் இலக்கணம் தருக.
4. கவிஞர் வைரமுத்து பற்றி குறிப்பு வரைக.
5. தமிழ்ச் சிறுகதை தோன்றிய காலம் பற்றி எழுதுக.
6. அகிலன் சிறுகதைகளின் போக்கினைச் சுட்டுக.
7. அயக்கண் பற்றி நீவிர் அறிவனவற்றை எழுதுக.
8. இணையம் என்றால் என்ன?
9. தமிழ்வளர்ச்சித் துறையின் பணிகள் எவை?
10. சிறுகதை அமைப்பு பற்றி குறிப்பிடுக.

## பகுதி ஆ

(5 × 5 = 25)

எல்லா வினாக்களுக்கும் விடை எழுதுக.

11. (அ) மொழி இறுதி எழுத்துக்களைச் சான்றுடன் விவரி.  
(அல்லது)  
(ஆ) சார்பெழுத்துக்களின் வகைகளை விளக்குக.
12. (அ) மு. மேத்தா வைகறை கவிதையில் உரைப்பன யாவை?  
(அல்லது)  
(ஆ) தாயும் சேயும் பற்றி கண்ணதாசன் கூறுவனவற்றை விவரிக்க.
13. (அ) சாபவிமோசனம் கதைக்கருவை விளக்குக.  
(அல்லது)  
(ஆ) அசோகமித்ரனின் கதை கூறும் பாங்கினை விவரி.
14. (அ) மின்நூலகம் – குறிப்பு வரைக.  
(அல்லது)  
(ஆ) இணையமும் வேலைவாய்ப்பும் பற்றி எழுதுக.
15. (அ) இணைய வளர்ச்சி குறித்து ஆய்க.  
(அல்லது)  
(ஆ) இன்றைய சிறுகதைகளின் போக்கினை மதிப்பிடுக.

## பகுதி இ

(3 × 10 = 30)

எல்லா வினாக்களுக்கும் விடை தருக.

16. (அ) வல்லினம் மிகும் இடங்களைச் சான்றுடன் விவரி.  
(அல்லது)  
(ஆ) உடம்படுமெய் பற்றி விவரிக்க.

17. (அ) புதுக்கவிதையிலும் சமூக நோக்கம் காணப்படுகின்றது எனும் கருத்தைப் புலப்படுத்துக.

(அல்லது)

- (ஆ) தமிழ்ச் சிறுகதை வளர்ச்சி பற்றி தெளிவுபடுத்துக.

18. (அ) இன்றைய இணைய இதழ்களின் நோக்கம் பற்றி எழுதுக.

(அல்லது)

- (ஆ) 'ஊடகங்கள்' எனும் தலைப்பில் 30 வரிகளில் கவிதை படைக்க.

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CP-8556

Sub. Code

21H

**B.Sc./B.B.A./B.Com. DEGREE EXAMINATION,  
APRIL 2018**

**Second Semester**

**Hindi**

**PROSE, GRAMMAR AND TRANSLATION – II**

**(2016/2017 onwards)**

**(Common for B.Sc. (Aero-Sci)/ B.Sc.(Nauti-Sci)/  
B.Sc. (F.D) / B.B.A. (A&AM)/B.B.A (IB)/B.Com. (BFS&I))**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

**(10 × 2 = 20)**

सभी प्रश्नों के उत्तर संक्षेप में लिखिए।

1. डॉ. राजेन्द्र प्रसाद का जनम कब और कहाँ हुआ?
2. उपन्यास सम्राट कौन है? और उनके प्रसिद्ध उपन्यास क्या है?
3. चुड़िहारिन के पेशे में क्या विशेषताएँ होनी चाहिए?
4. युवती कवि की ओर क्यों आकर्षित हुई?
5. लेखक बाद में क्यों और कैसे फँस गया?
6. महात्मा गांधी पाठ का लेखक कौन है? और यह पाठ किस विधा की रचना है?
7. अकर्मक क्रिया किसे कहते हैं?
8. सकर्मक क्रिया किसे कहते हैं?

9. प्रेरणार्थक क्रिया किसे कहते हैं?  
10. द्विकर्मक क्रिया किसे कहते हैं?

**Part B**

(5 × 5 = 25)

सभी प्रश्नों के उत्तर दीजिए।

संदर्भ सहित व्याख्या कीजिए।

11. (a) पश्चिम से पूर्व तक जाने में भी उसे इसकी विभिन्नताएँ देखने को मिलेंगी।  
या  
(b) केवल इसीलिए कि गन्दगी और दुर्गन्ध से बचे रहना उसकी आत्म-रक्षा के लिए आवश्यक है।
12. (a) क्या शहरों में ऐसी बालियाँ पहनी जाती हैं? मेरी माँ शहर से चूड़ियाँ लाती हैं, मैंने कहा है, वह इस बार मुझे भी ले चले।  
या  
(b) नौकर को हाथ के संकेत से चले जाने को कह, वह दोनों हाथों से मुँह ढँक कुर्सी पर गिर-सा पड़ा।
13. (a) सागर के किनारे के गाँव का यह नाम सुनकर क्या आपके मन में तरंग नहीं उठती कि जाकर देखें?  
या  
(b) ब्रिटिश साम्राज्य में एक जमाने में सूरज कहीं नहीं डूबता था। आज भी सूरज उगता है, लेकिन ब्रिटिश साम्राज्य चुक गया है।  
(व्याकरण) :
14. (a) 'ने' विधि का प्रयोग समझाइए।  
या  
(b) अपूर्ण क्रिया किसे कहते हैं? उदाहरण दीजिए।

15. (a) अकर्मक धातुओं से सकर्मक बनाने के नियम उदाहरण सहित समझाइए।

या

(b) सकर्मक धातुओं से प्रेरणार्थक बनाने के नियम बताइए।

**Part C**

(3 × 10 = 30)

सभी प्रश्नों के उत्तर दीजिए।

उत्तर विस्तार से लिखिए।

16. (a) भारतीय संस्कृति पाठ का सारांश लिखिए।

या

(b) 'बहता पानी निर्मला' पाठ का सारांश लिखिए।

17. (a) कारक किसे कहते हैं? उनके भेदों को उदाहरण सहित समझाइए।

या

(b) क्रिया-विशेषण किसे कहते हैं? अर्थ के अनुसार इसके कितने भेद हैं? उदाहरण सहित समझाइए।

18. हिन्दी में अनुवाद कीजिए।

(a) Shops advertise in the newspapers the things they have to sell. From the advertisements we learn where to buy such things as food, clothing and furniture. We also find out where to go to hear good music or to see a picture. People advertise in newspapers for help or to work. They advertise about houses to let or for sale. Sometimes in the newspaper there are pictures of interesting events that have happened.

या

- (b) As king Dasaratha was now getting old, he resolved to retire and confer the sovereignty upon Rama. Great preparation was made for the coronation of Rama. There was much rejoicing and bustle in the city, in the midst of which the second queen, Kaikeyi fell into great dejection. Once upon a time she had saved king Dasaratha by taking care of him during his serious illness, and he had showed his gratitude by promising to grant any two boons she might ask.
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<b>CP-8557</b>
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<b>Sub. Code</b>
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<b>21F</b>
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**B.Sc./B.B.A./B.Com. DEGREE EXAMINATION,  
APRIL 2018**

**Second Semester**

**French**

**FRENCH – II**

**(2016/2017 onwards)**

**(Common for B.Sc. (Aero.Sci)/B.Sc. (Nauti.Sci)/B.Sc.  
(FD)/B.B.A. (IB)/B.Com. (BFS & I))**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Translate in French :  
(a) Alphabets                      (b) Numbers
2. How will you greet “Good Morning and good Afternoon” in French?
3. Reconstitutes les phrases :  
(a) Service |à| votre \_\_\_\_\_  
(b) thé |votre| voila \_\_\_\_\_.
4. List out four types of articles used in French and English?



5. Reconstituez les phrases :
- (a) instant | S'il | plait | un | vous : \_\_\_\_\_
  - (b) units | une chambre | trois | pour : \_\_\_\_\_
6. Répondez aux questions :
- (a) Est-ce que le client a réservé? \_\_\_\_\_
  - (b) Combien de nuits est-ce qu'il veut rester?  
\_\_\_\_\_.
7. Convert singular into plural :
- (a) Le petit garçon
  - (b) La petite fille.
8. Convert masculine singular into feminine singular
- (a) Aucun
  - (b) Autre.
9. Convert feminine plural into masculine plural.
- (a) certaines
  - (b) chaque.
10. Give the infinitive Word for : (in English)
- (a) Étudier
  - (b) Punir

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. Reconstituez les expressions :

- (a) (i) de l'eau
- (ii) une salade
- (iii) une entrecôte.
- (iv) du saumon
- (v) des pâtes

OU

- (b) (i) fraîches
- (ii) grillée
- (iii) fumé
- (iv) composée
- (v) fraîche

12. Ecoutez et répétez :

- (a) 30, 40, 50, 60, 70, 80, 90, 100.

OU

- (b) 300, 400, 500, 600, 700, 800, 900, 1000.

13. (a) Trouvez le mot en Français :

- (i) Student –
- (ii) Welcome –
- (iii) Ear –
- (iv) Day –

OU

(b) Reconstituez les phrases :

- (i) instant | sil | plait | un | vous –
- (ii) nuits | une chambre | trois | pour –
- (iii) sur | oui | rien –
- (iv) service | à | votre –

14. (a) Ecrivez le jours de là semaine.

OU

(b) Ecrivez les mois de l'année.

15. (a) Ecrivez les quatre noms de légumes en Français.

OU

(b) Ecrivez les quatre noms de fruits en Français.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Ecrivez la conjugaison du verbe :

(i) s'appeler

(ii) avoir.

OU

(b) Ecrivez les nombres de 'zero' a'trenté.

17. (a) Write down any ten colours in French.

OU

(b) Write any five fruits and any five vegetables in French.

18. (a) Dialogue entre vous et votre ami dans un restaurant.

OU

(b) Dialogue entre vous et l'employé d'un magasin.

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<b>Sub. Code</b>
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<b>21/22</b>
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**B.Sc./B.B.A./B.Com. DEGREE EXAMINATION,  
APRIL 2018.**

**Second Semester**

**English**

**PROSE, EXTENSIVE READING AND COMMUNICATION  
SKILLS**

**(2016/2017 onwards)**

**(Common for B.Sc. (Aero.Sci) / B.Sc. (Nauti.Sci)/B.Sc.  
(FD)/B.Sc. (Optometry)/B.Sc. (C.S)/B.Sc. (Nut.  
Diet)/B.B.A. (A & AM)/B.B.A. (IB)/B.Com. (BFS & I))**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Who were the foreigners invaded and looted India?
2. What is society's duty to the engineer and the stock-broker?
3. What are the two ways in which science benefits man?
4. What makes Nehru himself as an Indian and a Hindu?
5. What were the circumstances made Lynd as a socialist?
6. Why did Bob take the tall man in the overcoat for his friend?
7. What trick did the conjuror perform with the Hindostance rings?

8. How did the astrologer manage to satisfy his customers?
9. What is adjective clause?
10. What is the conjunction used in Statement sentence of Indirect speech? Give example.

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) How does Kalam criticize Indian media?  

Or

(b) How does Nehru close his speech?
12. (a) What is the duty of society to the artist and the artist to society?  

Or

(b) “Conversion is a mysterious process”, according to Lynd. - Explain.
13. (a) Write the friendship of two friends in *After Twenty Years*.  

Or

(b) What tricks are practiced by the astrologer to cheat his clients?
14. (a) How did the conjuror take his revenge on the Quick man?  

Or

(b) Write the importance of Clause in Complex sentence.

15. (a) What are the rules for changing tenses from Direct to Indirect Speech?

Or

- (b) Role of Adjectives in Superlative degree.

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) Evaluate Kalam's three visions with your perspectives.

Or

- (b) Write an essay on the conflict between the state and the artist. How can the conflicts be resolved?

17. (a) How does the clash of Moral duty and friendship reflect in *After Twenty Years*?

Or

- (b) How does R.K. Narayan Portray the astrologer and the Villager?

18. (a) What are the kinds of pronoun? Explain in detail.

Or

- (b) What are the general rules for changing Indirect speech from Direct speech? Write with Examples.
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Sub. Code

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B.Sc. DEGREE EXAMINATION, APRIL 2018

Second Semester

Aeronautical Science

Allied — MATHEMATICS — II

(2016 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer all questions.

1. Evaluate  $\int_0^1 \int_0^2 xy^2 dy dx$ .
2. Evaluate  $\int_0^\pi \int_0^{a \cos \theta} r \sin \theta dr d\theta$ .
3. Find  $\nabla \phi$  at  $(1, -1, 2)$  if  $\phi = x^2 - y^2 - z^2 - 2$ .
4. When is a vector said to be irrotational?
5. Define analytic function of a complex variable.
6. Evaluate  $\int \frac{dz}{z-a}$ .
7. Find  $L[e^{-at}]$ .

8. Find  $L^{-1}\left[\frac{s}{s^2+a^2}\right]$ .
9. The mean and variance of a binomial distribution are 4 and  $\frac{4}{3}$  respectively. Find  $P(X \geq 1)$ , if  $n=6$ .
10. Define regression coefficient of  $Y$  on  $X$ .

**Part B****(5 × 5 = 25)**Answer **all** questions.

11. (a) Evaluate  $\int_0^1 \int_0^{\sqrt{1+y^2}} \frac{dx dy}{1+x^2+y^2}$ .
- Or
- (b) Evaluate  $\int_0^a \int_y^a \frac{x}{x^2+y^2} dx dy$  by changing the order of integration.
12. (a) If  $r$  is the position vector of any point  $P(x, y, z)$ , prove that  $\nabla r^n = nr^{n-2}r$ .
- Or
- (b) Evaluate  $\int_C \phi d\bar{r}$ , where  $C$  is the curve  $x=t, y=t^2, z=1-t$  and  $\phi=x^2y(1+z)$  from  $t=0$  to  $t=1$ .
13. (a) Show that  $f(z)=\sin z$  is analytic.
- Or
- (b) Show that the image of the hyperbola  $x^2-y^2=1$  under the transformation  $w=\frac{1}{z}$  is the lemniscate  $R^2 = \cos 2\phi$ .



14. (a) Find  $L[\sin^2 2t]$ .

Or

- (b) Find  $L^{-1}\left[\frac{1}{s(s+1)(s+2)}\right]$ .

15. (a) The first four moments of a distribution about the value 4 of the variable are  $-1.5, 17, -30$  and  $108$ . Find the moments about mean,  $\beta_1$  and  $\beta_2$ .

Or

- (b) Can  $Y=5+2.8X$  and  $X=3-0.5Y$  be the estimated regression equations of  $Y$  on  $X$  and  $X$  on  $Y$  respectively? Explain your answer with suitable theoretical arguments?

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Change the order of integration in  $\int_0^a \int_{\frac{x^2}{a}}^{2a-x} xy \, dy \, dx$

and then evaluate it.

Or

- (b) Verify Greens theorem in a plane with respect to  $\int_C [(x^2 - y^2) dx + 2xy dy]$ , where  $C$  is the boundary of the rectangle in the  $xoy$ -plane bounded by the lines  $x=0$ ,  $x=a$ ,  $y=0$ ,  $y=b$ .

17. (a) Verify Gauss divergence theorem for  $\vec{f} = x^2\vec{i} + z\vec{j} + yz\vec{k}$  over the cube formed by  $x = \pm 1$ ,  $y = \pm 1$ ,  $z = \pm 1$ .

Or

- (b) Determine the analytic function  $w = u + iv$  if  $v = e^{2x}(x \cos 2y - y \sin 2y)$ . Hence find  $u$ .
18. (a) Using Laplace transform solve  $y'' - 2y' + y = (t+1)^2$ ,  $y(0) = 4$  and  $y'(0) = -2$ .

Or

- (b) The ranks of same 16 students in Mathematics ( $X$ ) and Physics ( $Y$ ) are as follows :

$X$	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
$Y$	1	10	3	4	5	7	2	6	8	11	15	9	14	12	16	13

Calculate the rank correlation coefficient for proficiencies of this group in mathematics and physics.

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<b>Sub. Code</b>
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<b>24</b>
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**B.Sc. DEGREE EXAMINATION, APRIL 2018**

**Second Semester**

**Aeronautical Science**

**ENGINEERING MECHANICS AND STRENGTH OF  
MATERIALS**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define co-planar forces.
2. Define moment of force.
3. Define external and internal forces.
4. Define curvilinear translation.
5. Define simple harmonic motion.
6. Define friction.
7. Mention the classification of frames.
8. Define factor of safety.
9. Mention various elastic constants.
10. Define equivalent forces.

**Part B****(5 × 5 = 25)**Answer **all** questions.

11. (a) Explain resultant of forces.

Or

(b) Explain moment of a couple.

12. (a) Derive Impulse-momentum equation and equivalent forces.

Or

(b) Explain rigid body motion and free and forced vibrations.

13. (a) Explain velocity ratio, mechanical advantage and efficiency of simple lifting machine.

Or

(b) Explain belt friction in inclined plane.

14. (a) Derive the equation of efficiency of screw jack.

Or

(b) Explain friction in journal bearings.

15. (a) Write short notes on resolution of forces on a system.

Or

(b) Explain fundamental and derived units.

**Part C** $(3 \times 10 = 30)$ Answer **all** questions.

16. (a) Explain various types of forces.

Or

- (b) Derive the equation of the projective of the particle thrown from the ground.

17. (a) Derive the equation of centre of gravity of the bodies.

Or

- (b) Moment of inertia of the body from the first principle.

18. (a) Write short notes on external forces and internal forces.

Or

- (b) Explain theory of simple bending of beams.
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<b>CP-8561</b>
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<b>Sub. Code</b>
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<b>41</b>
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**B.Sc. DEGREE EXAMINATION, APRIL 2018**

**Fourth Semester**

**Aeronautical Science**

**EMPLOYABILITY SKILLS**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. How do we express our opinions?
2. What is time management?
3. What is called informal letter?
4. Mention any steps for filling job application.
5. What is report – writing?
6. Mention any two formal way of greeting.
7. What is called controlled composition?
8. What are the types of oral composition?
9. Describe charts.
10. What plays a vital role in non-verbal communication?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Describe interview skills and its techniques.

Or

- (b) Explain 'Describing people and place'.

12. (a) Differentiate formal and informal letter.

Or

- (b) Explain the important components of writing resumes.

13. (a) Write a report on independence day celebration.

Or

- (b) Mention any five note – taking methods.

14. (a) Write a paragraph on developing creative competency.

Or

- (b) Illustrate written composition.

15. (a) Short note on gesture and posture.

Or

- (b) Bring out the special features of visual aids.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write an essay on interview skills and its kinds, techniques.

Or

- (b) Write a letter to Margaret Sims confirming details of her speech next week. Make sure to include time, place and topic. Offer to help in any way you can.

17. (a) Differentiate note – making and note – taking.

Or

- (b) What are the steps to be followed for summarising a paragraph?

18. (a) Explain briefly on oral and written composition.

Or

- (b) What are the benefits of audio and visual aids in an effective communication?

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**B.Sc. DEGREE EXAMINATION, APRIL 2018**

**Fourth Semester**

**Aeronautical Science**

**AIRCRAFT SYSTEM**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define Hydraulic system.
2. State the purpose of Pneumatic relief valve.
3. Write short note on Ozone.
4. Differentiate De-icing and Anti-icing.
5. Describe fuel vent system.
6. What is the function reservoir and state its type?
7. What is the function of water separator?
8. What do you understand by Atmospheric pressure?
9. What types of systems are employed in wind shield rain / water removal?
10. What is vapor locking in aircraft fuel system?

**Part B****(5 × 5 = 25)**Answer **all** questions.

11. (a) Explain hydraulic reservoir in detail.

Or

- (b) Explain Aircraft hydraulic accumulator in detail.

12. (a) Describe high and medium pneumatic pressure system.

Or

- (b) State the advantages of pneumatic system over hydraulic system.

13. (a) Describe Air duct for cabin pressurization and Air-conditioning system.

Or

- (b) Describe in detail source of air supply for cabin pressurization and Air-conditioning system.

14. (a) Explain wind shield rain repellent system.

Or

- (b) Explain different methods of thermal anti-icing system.

15. (a) Describe integral fuel tank.

Or

- (b) Describe :

(i) Fuel jettisoning system

(ii) Fuel cross feed system.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Describe seals used in Aircraft Hydraulic System.

Or

- (b) How the fluid contamination check is carried in Aircraft hydraulic system?

17. (a) Describe, the following pneumatic system components in detail with figure :

- (i) Pressure regulator.  
(ii) Pressure control valve.

Or

- (b) What are methods used for heating the air in Air-condition system? Explain Combustion heater.

18. (a) With help of schematic diagram explain the hydraulic wind screen wiper system.

Or

- (b) Describe the light airplane pressure feed fuel system with schematic diagram.

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**B.Sc. DEGREE EXAMINATION, APRIL 2018**

**Fourth Semester**

**Aeronautical Science**

**AIRCRAFT INSTRUMENTS**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What are the principle components and instruments which comprise an aircraft pitot static system?
2. What do you understand by quantitative and qualitative display?
3. What do you understand by pressure error in a pitot — static system?
4. State two commonly used unit for atmospheric pressure measurement.
5. What is the difference between “pressure altitude”? and “indicated altitude”?
6. State the assumptions of standard atmosphere.
7. What is static Vent?
8. What do you mean by “rigidity” and “precession”?

9. What do you understand by the terms “gimbal lock” and “gimbal error”?
10. Why it is necessary to incorporate an additional erecting device in a TSI?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) What do you understand by the terms ‘hard iron’ and ‘soft iron’?

Or

- (b) Explain why vertical speed indicator is unaffected by pressure error?

12. (a) Explain the fundamental operational principle of Bowden tube.

Or

- (b) Explain how an altimeter compensated for errors due to atmospheric temperature changes?

13. (a) Explain why it is necessary to install a number of tank unit in a fuel tank.

Or

- (b) Describe the construction of a temperature sensing element.

14. (a) Describe the operation of engine vibrating indicator.

Or

- (b) Define compass. State the advantages and disadvantages of DR and RR compasses.

15. (a) What is a thermocouple? What are its type and state the applications?

Or

- (b) Explain the operation of a stall warning system in an aircraft.

**Part C** (3 × 10 = 30)

Answer **all** questions.

16. (a) Describe the construction and operation of flow type fuel quantity gauge with which you are familiar.

Or

- (b) Describe the construction and explain the operation of instruments used for measuring manifold pressure.

17. (a) What methods are adopted for driving the rotors of gyroscopic flight instruments?

Or

- (b) Explain the operation of VSI when an aircraft goes from level flight attitude in to a climb attitude.

18. (a) Sketch and describe the construction of pressure head.

Or

- (b) Describe the construction and operation of Artificial Horizon.

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**B.Sc. DEGREE EXAMINATION, APRIL 2018**

**Fourth Semester**

**Aeronautical Science**

**AIRCRAFT MATERIALS HARDWARE AND NDT**

**(2016 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define : wrought iron, calf iron and mild steel.
2. Define : malleability.
3. Define : Annealing.
4. Define Galvanic corrosion.
5. Explain the types of glues used in aircraft construction.
6. Define composite materials.
7. Explain the thermoplastics.
8. Explain the carbon composites.
9. Write note on Creep test.
10. Define fatigue test.

**Part B****(5 × 5 = 25)**Answer **all** questions.

11. (a) Explain Hardness, Brittleness, Toughness, Ductility and Malleability.

Or

- (b) Explain the properties of Titanium and its alloys.

12. (a) Define : Annealing, Tempering, Hardening and Normalizing.

Or

- (b) Define : Anodizing, Electro plating and Chromate treatment.

13. (a) Explain the types of Plastics used in aircraft construction.

Or

- (b) Explain the nuts, bolts, screws, washers and locking pins used in aircraft construction.

14. (a) Define FRPG's and carbon composites.

Or

- (b) Explain Therrosets and Thermoplastics.

15. (a) Explain Impact test.

Or

- (b) Explain Radiography inspection.



**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the properties of Nickel and its alloys.

Or

- (b) Explain copper and its alloys.

17. (a) Write notes on corrosion and its types.

Or

- (b) Write brief notes on woods used in aircraft construction.

18. (a) With neat picture explain Rockwell Hardness test and Tensile test.

Or

- (b) Explain Ultrasonic inspection and magnaflux inspection.
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**B.Sc. DEGREE EXAMINATION, APRIL 2018**

**Sixth Semester**

**Aeronautical Science**

**AIRCRAFT RULES AND AIRWORTHINESS  
REGULATION**

**(Upto 2015 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

**(5 × 3 = 15)**

Answer any **five** questions.

1. How the defect records are preserved?
2. Define :
  - (a) Flight Data Recorder (FDR)
  - (b) Commercial Operations
  - (c) Minimum Equipment List (EML)
3. What is Mandatory Modification?
4. What are the items to be equipped for sea plane when operated over water?
5. Briefly explain about calibration requirements of test equipments.
6. Discuss in brief about “Emergency Locator Transmitters”.

7. Explain in detail about the purpose of Aircraft Collision Avoidance System (TCAS).
8. Define :
  - (a) Traffic Advisory
  - (b) Resolution Advisory
  - (c) Aerial work

**Part B** (5 × 12 = 60)

Answer **all** questions.

9. (a) What are the instruments and equipments fitted aircraft when operated at night?

Or

- (b) What are the equipments and Instruments to be fitted in aircraft when operated as Visual Flight Rules (VFR)?

10. (a) Write in detail about different types of Flight Data Recorder (FDR) and its purpose.

Or

- (b) Explain in detail the inspection of Flight Recorder System.

11. (a) Write down the purpose of Ground Proximity Warning System (GPWS) and its requirements on different types of aircrafts.

Or

- (b) List out the content in the First Aid Kit in an aircraft.

12. (a) Explain :
- (i) Maintenance of test Equipment
  - (ii) Calibration of Test Equipment.

Or

- (b) What are the different types of written paper for appearing in AME License Examination?

13. (a) Explain the procedure for getting special Flight Permit.

Or

- (b) What are the requirements and procedure for issue of certificate of competency in welding and NDT?

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**B.Sc. DEGREE EXAMINATION, APRIL 2018**

**Sixth Semester**

**Aeronautical Science**

**INDUSTRIAL MANAGEMENT**

**(Upto 2015 Batch)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(5 × 3 = 15)

Answer any **five** questions.

1. Explain the principles of decision making?
2. What are the duties of a supervisor?
3. What are the objectives of ergonomics?
4. What is production planning and control?
5. Explain importance of communication?
6. What is the purpose of work study?
7. What is meant by office management?
8. Write the functions of Management.

**Part B**

(5 × 12 = 60)

Answer **all** questions.

9. (a) Explain the process of decision making.

Or

- (b) Explain the process of communication with neat diagram.

10. (a) Explain time management ways and techniques.

Or

(b) Explain the structure of production planning and control.

11. (a) Define scheduling and explain the factors affecting scheduling.

Or

(b) What is work study? Explain the two techniques used in work study.

12. (a) Explain the roles and duties of a supervisor.

Or

(b) Explain the barriers of communication.

13. (a) What is office correspondence? Explain its importance.

Or

(b) Explain ergonomics principles in the design of work system.

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**B.Sc. DEGREE EXAMINATION, APRIL 2018**

**Sixth Semester**

**Aeronautical Science**

**AIRPORT AND AIRTRAFFIC SERVICES**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

**(5 × 3 = 15)**

Answer any **five** questions.

1. Name the different aircraft parking configuration with neat sketch?
2. What is an X-ray Unit? Why it is installed in an airport?
3. List out the functions of briefing center in an airport.
4. What are the goods prohibited for carriage by air?
5. Define airport security.
6. What is metrological information?
7. What is Aerodrome Beacon?
8. Write the objectives of Air Traffic Control.

**Part B**

(5 × 12 = 60)

Answer **all** questions.

9. (a) Explain the principles of airport layout with neat sketch.

Or

- (b) Narrate the environmental factors with related to airport functions.

10. (a) Explain runway markings and Taxiway marking with neat sketch.

Or

- (b) Write brief note on Apron, Holding Apron and Terminal Apron.

11. (a) Explain VASI and PAPI with neat Sketch.

Or

- (b) Explain flight plan and its content.

12. (a) Explain Visual flight rules and Instrument flight rules.

Or.

- (b) Explain Airport Lightings with neat sketch.

13. (a) Explain the Features of Air Traffic services.

Or

- (b) Explain the role of metrology and the importance of communication in aviation industry.



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**B.Sc. DEGREE EXAMINATION, APRIL 2018**

**Sixth Semester**

**Aeronautical Sciences**

**GROUND HANDLING, SAFETY AND SUPPORT  
EQUIPMENT**

**(Upto 2015 batch)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

**(5 × 3 = 15)**

Answer any **five** questions.

1. What should be the position of signalman?
2. What is the purpose of electrical power unit?
3. Describe the safety lanes.
4. What are the advantages of single point fueling?
5. Describe the six methods of expelling extinguishing agents from fire extinguishers.
6. Explain water contamination of fuel.
7. Describe standard taxi light signals.
8. What are the periodic checks to be carried out on fire extinguishers?

**Part B**

(5 × 12 = 60)

Answer **all** questions.

9. (a) Briefly explain class of fire vs. fire extinguishing Agents.

Or

- (b) Briefly explain the aircraft jacking procedure.

10. (a) Describe the securing of :
- (i) Multi engine aircraft
  - (ii) Seaplane and aircraft on skis.

Or

- (b) Describe the helicopter securing procedure.

11. (a) Describe :
- (i) Power cord protection
  - (ii) The precautions for aircraft tire mounting.

Or

- (b) Describe the welding Maintenance safety.

12. (a) Briefly explain the fueling operation.

Or

- (b) Explain under wing fueling.

13. (a) Explain the operating procedure and maintenance of hydraulic test rig.

Or

- (b) Describe :

- (i) The air-conditioning and heating unit. (8)
- (ii) Pre oiling equipment. (4)