# BRIDGE COURSE BY SCHOOL OF ENGINEERING

UPES organizes Orientation and Induction program for the newly admitted students every year. The main objective of the Orientation program is to make the students aware of the academic aspects of the course, the rules and regulations of the University and ensuring active participation and progress of the students.

The Induction Program is thus designed to make the newly joined UG students feel comfortable, sensitize them towards exploring their academic interests and activities, promote bonding with each other, and build relations between teachers and students and to give a broader view of life.

The induction program includes Bridge Classes for Physics, Chemistry, Mathematics and Communication skills. It also includes various activities like Universal Human values workshop, visits to science regional centers, technology parks, museums, industries etc., First Aid workshop and counselling session, Social concern activity, Sports and Cultural activities, technical workshop, address by the spokespersons from Examination committee, Library, Discipline Committee, students' counselor, to mention a few.

## 1. Orientation

The purpose of Orientation on the very first day is to make all the newly admitted students acquainted with all activities organized in UPES for them, well in advance and it help them to choose an appropriate one to participate.

## 2. Familiarization with School/Department

Students are acquainted with their respective school/department/Program of study/laboratories/workshops/ICT facilities and other facilities. This interaction helps the students to differentiate between college life and school life along with career prospects offered by specific courses they have opted for.

## 3. Personality Enhancement Program (P.E.P.)

Personality Enhancement Program (P.E.P.) is an effort to update the base knowledge set of new students through intensive training experience for a smooth school to college transition. The balanced module helps the students to clearly communicate to collaborate with their colleagues after critical deliberations on their future course of action for next four years.

### 4. Physical Activities

Sports help an individual much more than in the physical aspects alone. It builds character, teaches and develop team spirit, strategic thinking, analytical thinking, leadership skills, goal setting and risk taking. The students enthusiastically participate in games of their interest.

### 5. Creative arts and culture program

Social concern activities aim to promote the students' interests and concern for social issues and to foster their passion for community service. This program also creates opportunities for the students to be engaged in social analysis and reflect on their experiences. The students prepare posters on various social themes and eventually come up with group presentations. The selected groups present a skit as well.

Along with this activity, 'Cultural Fiesta' provides a stage to the performers in the field of dance, singing, poetry recitation, acts. The students enthusiastically participate in the event, displaying their talent of singing, dancing (solo and group), poetry recitation, skit performance and comic acts.

### 6. Extracurricular activities

Extracurricular activities increase opportunities for social interaction and new relationship development. With this aim in mind, the activities are planned for various categories like Solo singing, group singing, poetry/comedy and dance, giving the students an exposure to perform before audience.

### 7. Universal Human Values Workshop

The goal of this workshop is to inculcate a deep sense of importance of core values in human life and ethics in society that students should live by. The program includes more interactive and experiential session so that the students learn to meditate and connect with their Higher Self within.
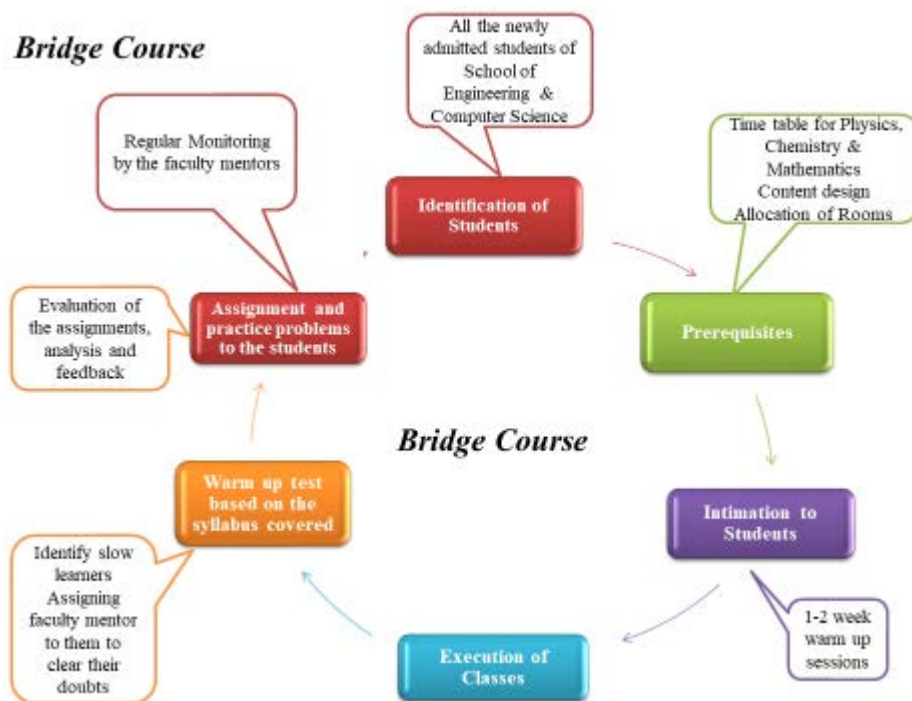
### 8. Visits to Local Area

Visit to Regional Science & Historic Centers paves the way for the students to portray the growth of Science and Technology in our day to day life. The students are exposed to various science experiments relevant in day-to-day life, science museum, ecology of Uttarakhand, planetarium, 3D movie on environment, etc.

### 9. Bridge Course:

The refresher classes for Physics, Chemistry, Mathematics and Communication skills are organized in order to bridge the gap between their schooling and graduation. The main objective

of the bridge course is to provide intellectual base to the students which eventually help them to face challenges of University education in a more efficient manner.



**Bridge Course**

- All the newly admitted students of School of Engineering & Computer Science
- Regular Monitoring by the faculty mentors
- Time table for Physics, Chemistry & Mathematics Content design Allocation of Rooms
- Identification of Students
- Prerequisites
- Evaluation of the assignments, analysis and feedback
- Assignment and practice problems to the students
- Intimation to Students
- Identify slow learners Assigning faculty mentor to them to clear their doubts
- Warm up test based on the syllabus covered
- Execution of Classes
- 1-2 week warm up sessions

**Bridge Course**

Sample case - School of Engineering conducted a Bridge Course from 31 July 2017- 5 August 2017. The details for the same are attached below

**Dr. Piyush Kuchhal**

| | |
|---|---|
| **From:** | Dr. Piyush Kuchhal |
| **Sent:** | Friday, July 28, 2017 12:01 PM |
| **To:** | UPES-hod_ces |
| **Cc:** | Dr. Kamal Bansal; Dr. Manish Prateek; Dr. Suresh Kumar |
| **Subject:** | Warm-Up Classes for B. Tech Ist year students (Batch 2017-2018) |
| **Attachments:** | Notice Group A&B.xlsx |

Dear Colleagues,

It is to apprise you that the Department of Sciences is going to organize the warm-up classes followed by class test for newly admitted B. Tech Ist year students from July 31, 2017 to August 5, 2017. The purpose of a warm-up classes is to help the students revise their basic concepts and set the tone for what will follow. The class test would help us to customize the mode of instructions as per learning capability of the students.
The regular classes for B. Tech Ist year students will start from August 8, 2017.

The details of warm-up classes is attached with this mail for your ready reference and guidance to the students.

With regards,

Piyush Dua

## NOTICE
## WARM UP CLASSES
## B.TECH 1st YEAR STUDENTS
## 31st JULY– 4th AUGUST

This is to inform you that warm up classes for Physics, Chemistry & Mathematics will be conducted as per the schedule below:

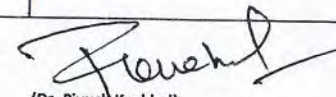| BRANCHES | | ROOM NUMBER | TIMING |
|---|---|---|---|
| IFE (R680217001- R680217049) | | 10101 | CHEMISTRY: 10.00 am - 11.30 am  MATHEMATICS-11.30-1.30 pm  LUNCH- 1.30pm-2.30pm  PHYSICS- 2.30 pm- 4.30 pm |
| Aerospace Engg spl Avionics (R890217001-R890217025) | | | |
| Aerospace Engg spl Avionics (R890217026- R890217042) | | 10102 | |
| Geo-Informatics Engineering (R620217001-R620217028) | | | |
| Geo-Science Engineering (R490217001-R490217025) | | | |
| Automotive Design Engg (R160217001-R160217069) | | 10103 | |
| Aerospace Engineering (R290217001- R290217065) | | 10104 | |
| Power System Engineering (R630217001-R630217008) | | | |
| Electronics & Communication Engg (R173217001-R173217057) | | 10105 | |
| APE+UP Stream (R870217002-R870217074) | | 10106 | |
| APE+UP Stream | (R870217075-R870217142) | 10201 | |
| APE+GAS Stream | (R820217003-R820217072) | 10202 | |
| APE+GAS Stream (R820217073-R820217139) | | 10203 | |
| Chemical Engg (R900217001-R900217067) | | 10204 | |
| Chemical Engg (R900217068-R900217137) | | 10205 | |

(Dr. Piyush Kuchhal)
**Associate Dean, Apllied Sciences**

# NOTICE

WARM UP CLASSES

## B.TECH 1st YEAR STUDENTS

1st AUGUST– 4th AUGUST

This is to inform you that warm up classes for Physics, Chemistry & Mathematics will be conducted as per the schedule below:

| BRANCHES | ROOM NUMBER | TIMING |
|---|---|---|
| Fire Safefty Engineering  (R260217001- R260217057) | 1201 | MATHMATATICS: 9:45 am-11:45pm<br>PHYSICS-11.45-1.30 pm<br>LUNCH- 1.30pm-2.30pm<br>CHEMISTRY: 2.30 pm- 4.30 pm |
| Minning Engg. (R136217001-R136217010) | | |
| Mechatronics Engg (R880217001- R880217030) | 1202 | |
| Electrical Engineering(R132217001-R132217024) | | |
| Mechanical Engg.  (R113217001-R132217021) | | |
| Mechanical Engg.  (R113217022-R132217096) | 1203 | |

(Dr. Piyush Kuchhal)
Associate Dean, Apllied Sciences

## MATH 1001--Group A

| SN | Faculty | Group | Room No. | TIMINGS |
|---|---|---|---|---|
| 1 | Dr. Maheshwar Pathak | Group-A1 | 10101 | 11:30-1:30PM |
| 2 | Dr. Monika Manglik | Group-A2 | 10102 | 11:30-1:30PM |
| 3 | Dr. Shweta Sachdeva | Group-A3 | 10103 | 11:30-1:30PM |
| 4 | Dr. Mithilesh Singh | Group-A4 | 10104 | 11:30-1:30PM |
| 5 | Dr. Anuj Kumar | Group-A5 | 10105 | 11:30-1:30PM |
| 6 | Dr. Sangeeta Pant | Group-A6 | 10106 | 11:30-1:30PM |
| 7 | Dr. Pradeep Malik | Group-A7 | 10201 | 11:30-1:30PM |
| 8 | Dr. Sanoj Kumar | Group-A8 | 10202 | 11:30-1:30PM |
| 9 | Dr. Mukesh Awasthi | Group-A9 | 10203 | 11:30-1:30PM |
| 10 | Dr. Sandeep Dixit | Group-A10 | 10204 | 11:30-1:30PM |
| 11 | Dr. Girish Dobhal | Group-A11 | 10205 | 11:30-1:30PM |

## MATH 1001-GROUP B

| SN | Faculty | GROUP | Room No. | TIMINGS |
|----|---------|-------|----------|---------|
| 1 | Dr. Manoj Kumar | Group-B1 | 1201 | 9:45AM-11:45AM |
| 2 | Dr. Mradul Veer Singh | Group-B2 | 1202 | 9:45AM-11:45AM |
| 3 | Dr. Shashank Chaube | Group-B3 | 1203 | 9:45AM-11:45AM |

| MATH1002-GROUP C | | |
|---|---|---|
| SN | Faculty | Group |
| 1 | Dr. Shashank Chaube | Group-C1 |
| 2 | Dr. Pratibha Joshi | Group-C2 |
| 3 | Dr. Anupam Bhandari | Group-C3 |
| 4 | Dr. Mradul Veer Singh | Group-C4 |
| 5 | Dr. Reshu Gupta | Group-C5 |
| 6 | Dr. Pankaj Kumar Mishra | Group-C6 |
| 7 | Dr. Pavan Kumar Pannala | Group-C7 |
| 8 | Ravi Kiran Maddali | Group-C8 |
| 9 | Dr. Akmal Husain | Group-C9 |
| 10 | Dr. Anurag Shukla | Group-C10 |
| 11 | Dr. Nitin Uniyal | Group-C11 |
| 12 | Dr. Manoj Kumar | Group-C12 |
| 13 | Dr. Mithilesh Singh | Group-C13 |
| 14 | Dr. Pradeep Malik | Group-C14 |
| 15 | Dr. Sangeeta Pant | Group-C15 |

# BRIDGE COURSE (FOR NON CIT)

1. **MATRICES-** Types of matrices: Symmetric, Skew-symmetric, Orthogonal, Idempotent and Involutory, Determinant and its properties, Elementary row transformations, Solution of system of linear equation.

   2 hrs.

2. **DIFFERENTIAL CALCULUS-** Limits and Continuity, Differentiability and Monotonicity, Derivative of a function, Tangent and Normal, Maxima and Minima, Mean value theorems.

   2 hrs.

3. **INTEGRAL CALCULUS-** Integration and standard results, Integration by substitution, Integration by parts, Integration by partial fraction, Definite integral and its properties, Area under curve, Area between two curves.

   2 hrs.

4. **DIFFERENTIAL EQUATION-** Order and Degree of differential equation, Solution of first order first degree differential equation, Solution of first order homogeneous differential equation.

   1 hr.

5. **TRIGNOMETRY & COMPLEX NUMBERS-** Trigonometric identities, Euler's formula, De Moivre theorem, Cartesian plane, Polar plane, $n^{th}$ root of unity

   1 hr.

6. **GEOMETRY-** Straight line, Pair of straight line, Circle, Parabola, Ellipse, Hyperbola, Direction Cosine, Direction ratio, Plane.

   1 hr.

7. **VECTOR & PROBABILITY-** Definition of vectors, Addition of vectors, Dot product, Cross product, Permutation and Combination, Basic probability theory.

   1 hr.

# BRIDGE COURSE (FOR CIT)

1. **SET THEORY-** Sets and their operations (Union, Intersection, Complement, Difference and symmetric difference), Cartesian product of sets and properties. *1 hr.*

2. **DIFFERENTIAL CALCULUS-** Limits and Continuity, Differentiability and Monotonicity, Derivative of a function *1 hr.*

3. **INTEGRAL CALCULUS-** Integration and standard results, Integration by substitution, Integration by parts, Integration by partial fraction, Definite integral and its properties, Area under curve, Area between two curves.

   *2 hrs.*

4. **MATRICES-** Determinant and its properties, Some special matrices like Symmetric, Skew-symmetric, Orthogonal, Idempotent and Involutory, Elementary row transformations. *2 hrs.*

Dr. Maheshwar Pathak

A1

| S.NO. | BRANCH | ROLL NUMBER | SAP ID | NAME | ROOM NO. | 31/07/17 | 01/08/17 | 02/08/17 | 3/08/17 | 4/08/17 |
|-------|--------|-------------|--------|------|----------|----------|----------|----------|---------|---------|
| 1 | IFE 2017 | R680217001 | 500062201 | AAYUSH GOEL | 10101 | | | | | |
| 2 | IFE 2017 | R680217002 | 500061296 | ACHINTYA . | 10101 | | | | | |
| 3 | IFE 2017 | R680217003 | 500062740 | ADITI MISHRA | 10101 | | | | | |
| 4 | IFE 2017 | R680217004 | 500061618 | ADITYA RAJ | 10101 | | | | | |
| 5 | IFE 2017 | R680217005 | 500062252 | ANANT  KUMAR SINGH | 10101 | | | | | |
| 6 | IFE 2017 | R680217006 | 500063115 | ANUJ JEENA | 10101 | | | | | |
| 7 | IFE 2017 | R680217007 | 500060172 | ANURAG . | 10101 | | | | | |
| 8 | IFE 2017 | R680217008 | 500062631 | ARJUN SHARMA | 10101 | | | | | |
| 9 | IFE 2017 | R680217009 | 500060229 | ASHISH PADIYAR | 10101 | | | | | |
| 10 | IFE 2017 | R680217010 | 500062951 | ASHUTOSH DUBEY | 10101 | | | | | |
| 11 | IFE 2017 | R680217012 | 500062546 | AYUSH SINGH | 10101 | | | | | |
| 12 | IFE 2017 | R680217013 | 500062771 | * BIPUL KUMAR | 10101 | | | | | |
| 13 | IFE 2017 | R680217014 | 500060158 | CHETAN AGRAWAL | 10101 | | | | | |
| 14 | IFE 2017 | R680217015 | 500061155 | DHRUV AHUJA | 10101 | | | | | |
| 15 | IFE 2017 | R680217016 | 500062939 | HARSHIT GAUTAM * | 10101 | | | | | |
| 16 | IFE 2017 | R680217017 | 500060005 | HIMANSHU KUMAR | 10101 | | | | | |
| 17 | IFE 2017 | R680217018 | 500063396 | HRITIK SINGH | 10101 | | | | | |
| 18 | IFE 2017 | R680217019 | 500061024 | ISHANK MISHRA | 10101 | | | | | |
| 19 | IFE 2017 | R680217021 | 500062042 | JAYESH PRASAD | 10101 | | | | | |
| 20 | IFE 2017 | R680217022 | 500060153 | KARAN DHAWAI | 10101 | | | | | |
| 21 | IFE 2017 | R680217023 | 500062779 | MONTY GOYAL | 10101 | | | | | |
| 22 | IFE 2017 | R680217024 | 500062564 | NAMAN SOLANKI | 10101 | | | | | |
| 23 | IFE 2017 | R680217025 | 500063111 | NIHIT GAUTAM | 10101 | | | | | |
| 24 | IFE 2017 | R680217027 | 500062174 | NUMAN KAMLAK | 10101 | | | | | |
| 25 | IFE 2017 | R680217029 | 500063057 | PRIYANK SHARMA | 10101 | | | | | |
| 26 | IFE 2017 | R680217030 | 500063086 | RINKLE BHADANA | 10101 | | | | | |
| 27 | IFE 2017 | R680217031 | 500063118 | SAHIL SINGH | 10101 | | | | | |
| 28 | IFE 2017 | R680217034 | 500063381 | SHANKAR KUMAR | 10101 | | | | | |
| 29 | IFE 2017 | R680217035 | 500062222 | SHUBHAM NARWAL | 10101 | | | | | |
| 30 | IFE 2017 | R680217037 | 500060113 | SURYANSH GOEL | 10101 | | | | | |
| 31 | IFE 2017 | R680217038 | 500062757 | T.RAM RAJ | 10101 | | | | | |
| 32 | IFE 2017 | R680217039 | 500062790 | TANZIN NORDEN | 10101 | | | | | |
| 33 | IFE 2017 | R680217040 | 500060214 | UDIT KISHORE SHARMA | 10101 | | | | | |
| 34 | IFE 2017 | R680217041 | 500062178 | UTKARSH ARUN | 10101 | | | | | |
| 35 | IFE 2017 | R680217042 | 500062266 | VAIBHAV ANAND | 10101 | | | | | |
| 36 | IFE 2017 | R680217043 | 500062736 | VIDHI SINGH | 10101 | | | | | |

$Q_{16})$ If $\cdot \vec{u} = 2\hat{i} + 2\hat{j} - \hat{k}$ _ _ _ _ _ _ _ $\vec{u}$ a

$\vec{v}$ is

Ans 16) $d)$ $\dfrac{1}{\sqrt{425}}$ $(\hat{i} - 10\hat{j} - 18\hat{k})$

$Q17)$ If the given lines _ _ _ _ are perpendicular

then $k$ is

Ans 17) $c)$ $-\dfrac{10}{7}$

$Q18)$ The angle between _ _ _ _ is

$(b)$ $\dfrac{\pi}{2}$

$Q19)$ The probability of obtaining _ _

_ _ _ is rolled is

Ans 19) $d)$ $\dfrac{1}{36}$

$Q20)$ If $R$ is the set _ _ _ equal

to

Ans 20) $(c)$ $u$

$$x = \frac{1}{4}(y-3)$$

① $\therefore \; x = f^{-1}(y) = \frac{1}{4}(y-3)$

or $f^{-1}(x) = \frac{1}{4}(x-3)$

Q22) Prove that $\tan^{-1}\left(\dfrac{\sqrt{1+x} - \sqrt{1-x}}{\sqrt{1+x} + \sqrt{1-x}}\right) \cdots$

$\cdots = \dfrac{\pi}{4}$ ?

Ans 22) $\tan^{-1}\left(\dfrac{\sqrt{1+x} - \sqrt{1-x}}{\sqrt{1+x} + \sqrt{1-x}}\right) = \tan^{-1}\left(\dfrac{(\sqrt{1+x} - \sqrt{1-x})^2}{(\sqrt{1+x})^2 - (\sqrt{1-x})^2}\right)$

$\Rightarrow \tan^{-1}\left[\dfrac{(1+x) + (1-x) - 2\sqrt{(1+x)(1-x)}}{1+x - 1 + x}\right]$

$\Rightarrow \left[\dfrac{2 - 2\sqrt{1-x^2}}{2x}\right] = \tan^{-1}\left(\dfrac{1 - \sqrt{1-x^2}}{x}\right)$

let $x = \cos\theta$

$\Rightarrow \tan^{-1}\left[\dfrac{1 - \sin\theta}{\cos\theta}\right] = \tan^{-1}\left[\dfrac{(\cos\frac{\theta}{2} - \sin\frac{\theta}{2})^2}{\cos^2\frac{\theta}{2} - \sin^2\frac{\theta}{2}}\right]$

$= \tan^{-1}\left[\dfrac{\cos\left(\frac{\theta}{2}\right) - \sin\left(\frac{\theta}{2}\right)}{\cos\left(\frac{\theta}{2}\right) + \sin\left(\frac{\theta}{2}\right)}\right]$

$\Rightarrow \tan^{-1}\left[\dfrac{1 - \tan\frac{\theta}{2}}{1 + \tan\frac{\theta}{2}}\right]$

$\Rightarrow \tan^{-1}\left(\tan\left(\dfrac{\pi}{4} - \dfrac{\theta}{2}\right)\right)$

$$\Rightarrow \quad \frac{\pi}{4} \quad -\frac{1}{2} \ 0$$

$$\Rightarrow \quad \frac{\pi}{4} - \frac{1}{2} \cos^{-1}(x) \qquad \frac{-1}{\sqrt{2}} \leq x \leq 1$$

$$\Rightarrow \quad \tan^{-1}\left[\frac{\sqrt{1+x} - \sqrt{1-x}}{\sqrt{1+x} + \sqrt{1-x}}\right] = \frac{\pi}{4} - \frac{1}{2}\cos^{-1}x$$

$$\longrightarrow \quad , -\frac{1}{\sqrt{2}} \leq x \leq 1$$

H. P.

**Q13)** If $x, y, z$ are different no. and

———————————— ~~$(x+y)$~~ $1 + xyz = 0$.

Au 13) $\Delta = \begin{vmatrix} x & x^2 & 1+x^2 \\ y & y^2 & 1+y^3 \\ z & z^2 & 1+z^3 \end{vmatrix} =$

$R_1 \to R_1 - R_2$

$R_2 = R_2 - R_3$

$$\begin{vmatrix} x-y & x^2-y^2 & x^3-y^3 \\ y-z & y^2-z^2 & y^3-z^3 \\ z & z^2 & 1+z^3 \end{vmatrix} = 0$$

$$(x-y)(y-z)\begin{vmatrix} 1 & x+y & x^2+yz+xy \\ 1 & y+z & y^2+z^2+yz \\ 2 & z & 1+z^3 \end{vmatrix}$$

$$\frac{dy}{dx} = \frac{\frac{dy}{dt}}{\frac{dx}{dt}} = \frac{a t \sin t}{a t \cos t} = \tan t$$

$$\frac{dy}{dx} = \tan t$$

$$\frac{d^2 y}{dx^2} = \frac{d}{x}\left(\frac{dy}{dx}\right) = \frac{d}{dx}(\tan t)$$

$$= \frac{d}{dt}(\tan t)\frac{dt}{dx}$$

$$\frac{d^2 y}{dx^2} = \sec^2 t \frac{1}{a t \cos t} = \frac{1}{a t \cos^2 t}$$

$$\boxed{\frac{d^2 y}{dx^2} = \frac{1}{a t \cos^3 t}}$$

Q26) find $\int \dfrac{x^2+1}{x^2-5x+6}\, dx$

Ans.¹ $\int \dfrac{x^2+1}{x^2-5x+6}\, dx$

$$\Rightarrow \int \left\{ 1 + \frac{5x-5}{x^2-5x+6} \right\} dx$$

$$\Rightarrow \int dx + \int \left\{ \frac{10}{x-3} - \frac{5}{x-2} \right\} dx$$

$$\Rightarrow x + 10 \log_e (x-3) - 5\log_e(x-2)$$

# University of Petroleum &Energy Studies

## College of Engineering Studies

### Warm Up Test-5th August, 2017

Name of Student:_____        Branch:_____

Enrollment No._____        SAP ID._____

**Time: 2 hours 15 minutes**        **Max. Marks: 80**

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## Do not open this booklet until you are told to do so by the invigilator.

Read the instructions carefully before you start the exam        :

1. The question paper has separate sections for Physics, Chemistry and Mathematics with a total of 80 questions.
2. Before you start the examination, check that your answer sheet is free from printing defects, i.e. faded print, missing print, repetitive defects etc.. Ask the invigilator to replace your answer sheet if it has printing defects.
3. All the questions are multiple choice questions with 4 options: A, B, C, D.
4. Read the questions carefully and choose the ONE best answer.
5. Mark only one answer. Multiple answers will be cancelled.
6. Use **only pen** to fill the answer sheet.
7. Each question carries 1 mark for each correct answer.
8. No negative marking.
9. Do NOT fold or crease your answer sheet.
10. Make sure that all the entries are filled correctly on the booklet as well as answer sheet.
11. At the end of the exam, answer sheet as well as the question booklet has to be handed over to the invigilator.
12. No student is allowed to submit the answer sheet and leave the room before 1 hour of the commencement of exam.

# PHYSICS

1. Calculate the number of photons, from green light of mercury ($\lambda = 4961$ Å), required to do one joule of work.
   (A) $4524.2 \times 10^{18}$   (B) $2.4961 \times 10^{18}$
   (C) $2.4961$   (D) $2.4961$

2. In which of the following the interference is produced by the division of wavefront
   (A) Michelson's interferometer
   (B) Soap bubble
   (C) Newton's ring
   (D) Biprism

3. In Young's double slit experiment the bright and dark fringes are obtained on a screen. If the screen is gradually moved towards the slits, then it is observed that the separation between the successive fringes
   (A) Increases   (B) decreases
   (C) remain constant (D) none of these

4. When a thin transparent sheet is placed in the path of one of the interfering waves then
   (A) The entire fringe system shift towards the side on which the sheet is placed
   (B) The entire fringe system shift towards the opposite side on which the sheet is placed
   (C) There is no shift in the fringe pattern
   (D) the fringe system becomes narrower

5. Which of the following is conserved when light waves interfere?
   (A) Intensity   (B) energy
   (C) amplitude   (D) momentum

6. A light wave can travel
   (A) In vacuum
   (B) in material medium
   (C) in both
   (D) none of these

7. When light is refracted, which of the following does not change?
   (A) Wavelength   (B) velocity
   (C) frequency   (D) amplitude

8. As per Gauss's Law, the total electric flux $\varphi$ through a closed surface and the total charge q enclosed by that surface are related as
   (A) $\emptyset = \int B ds$   (B) $Q = \emptyset$
   (C) Both   (D) None

9. Which of the following is true for electrostatics?.
   (A) $E = -\nabla V$   (B) $\nabla^2 = 0$
   (C) $V = -\nabla E$   (D) None of these

10. Electric flux density_____medium.
    (A) depends on the
    (B) is independent of the
    (C) both (A) and (B)
    (D) None of these

11. A charge of 12 C has velocity of $5a_x + 2a_y - 3a_z$ m/s. Determine **F** on the charge in the field of (i) E=18$a_x$,+5$a_y$ +10$a_z$ V/m (ii) **B** = 4$a_x$ + 4$a_y$ + 3$a_z$ wb/m$^2$.

(A) F = 254.27 N and 415.17 N
(B) 154.17 N and 315.17 N
(C) Both are possible
(D) Nil

12. Magnetic flux density is a relation of

(A) Current and area

(B) Area and its direction

(C) Magnetic flux and area

(D) None

13. Magnitude of electric dipole moment of a dipole with charges q separated by a distance d is given as

(A) q/d       (B) qd
(C) d/q       (D) None of these

14. Curl of electrostatic field is

(A) ∞       (B) 0
(C) 1       (D) None of these

15. F=qB $x$ V represents the force exerted on a

(A) Charge q moving with velocity V in an electric field

(B) Charge q moving with velocity V in a magnetic field B

(C) Both

(D) None

16. The magnitude of the emf induced is directly proportional to rate of change of magnetic flux. This is put forth by

(A) Bio–Savart's law  (B) Faraday's I law

(C) Ampere's law     (D) Faraday's II law

17. Curl of magnetic field intensity is
(A) current density
(B) magnetic flux density
(C) current
(D) zero

18. Total flux passing through a closed surface held in a magnetic field is
(A) ∞       (B) 0
(C) 1       (D) None

19. When two similar metal balls with charges of +2C and -0.5C are brought in contact and then separated, the charges on each metal ball will be
(A) Equal and same
(B) unequal and same
(C) equal and opposite
(D) Unequal and opposite

20. Magnetic monopoles does not exist, may be contained in
(A) Gauss law of magnetism
(B) Biot Savert's law
(C) Ampere's law
(D) Faradey's law

21. Maxwell's equations are based on _____ law(s).
(A) Faraday's      (B) Gauss's
(C) Ampere's       (D) All of these

22. Displacement current density $J_D$ is equal to
(A) $\delta D/\delta t$       (B) 0
(C) 1       (D) - $\delta D/\delta t$

23. A car with speed of 22.2 m/s blowing it's horn while it is approaching a dog sitting on the road. If the frequency of the horn is 437.9 Hz and the speed of sound is 337 m/s, what might be the frequency that dog hears?

(A) 330 Hz      (B) 468Hz
(C) 685 Hz      (D) 440Hz

24. 90 dB is _____ more sound pressure than 70 dB

(A) 100 times      (B) 20 times
(C) 10 times      (D) 44times

25. Sound is produced due to

(A) friction      (B) circulation
(C) vibrations      (D) refraction

26. In which of the following, the speed of sound is least?

(A) Air      (B) Liquid
(C) Solid      (D) Vaccum

27. Wavelength of ultrasonic waves is

(A) more than audible sound
(B) less than audible sound
(C) equal to audible sound
(D) greater than speed of light

28. Reflection of sound is called
(A) quality      (B) loudness
(C) pitch      (D) echo

29. A human ear can hear sounds in range of

(A) 40-40,000 Hz  (B) 30-35 Hz
(C) 20-20000 Hz  (D) 50-50000 Hz

30. Technique used to absorb noise by using soft and porous surfaces is called

(A) acoustic protection
(B) refraction
(C) absorption
(D) semi lunar protection

# CHEMISTRY

31. Calculate Enthalpy of formation of Methane (**in KCal/mol**), if its enthalpy of combustion is -890.35 KJ/mol and enthalpy of formation of water and carbon dioxide is -285.84 Kj/mol and -393.51 Kj/mol respectively.
    (A) -74.84
    (B) -17.81
    (C) -20.01
    (D) -223.5

32. Fractional distillation is used when difference in
    (A) Melting points of two solids is less.
    (B) Boiling points of two liquids is large.
    (C) Boiling points of two liquids is small.
    (D) Melting points of two liquids is large.

33. Determine $\Delta E$ for below mentioned chemical transformation, if $\Delta H_f^\circ$ for $CO_2$ (g), CO (g) and $H_2O$ (g) are -393.5, -111.31 and -241.8 $kJmol^{-1}$ respectively at 298 K
    $CO_2$ (g) + $H_2$ (g) → CO (g) + $H_2O$ (g)
    (A) 40.39 kJ/mol
    (B) -40.39 kJ/mol
    (C) 746.61 kJ/mol
    (D) -746.61 kJ/mol

34. Which one of the following statements best describes the enthalpy change of a reaction?
    (A) The energy released when chemical bonds are formed during a chemical reaction
    (B) The energy consumed when chemical bonds are broken during a chemical reaction
    (C) The difference between the energy released by bond formation and the energy consumed by bond cleavage during a chemical reaction
    (D) The increase in disorder of the system as a reaction proceeds

35. The enthalpy of combustion of galactose is -2908 $kJ\ mol^{-1}$. Which one of the following statements regarding this process is false?
    (A) The products of the combustion of galactose are less stable than galactose itself
    (B) This process is exothermic
    (C) Overall, energy is liberated when this process happens
    (D) None of the above

36. The EMF of the electrochemical cell, Fe, $Fe^{2+}$ (0.1M) I $X^{2+}$ (0.001M), X; will be?
    If $E^\circ$ ($Fe^{2+}$ /Fe) = 0.44V and $E^\circ$ ($X^{2+}$/X) = -0.40V
    (A) -0.889 V
    (B) +0.889 V
    (C) -1.501 V
    (D) +1.501V

37. An electrochemical cell is also called
    (A) battery cell
    (B) galvanic cell
    (C) chargeable cell
    (D) None of the above

38. Potential of single hydrogen electrode is considered as
    (A) zero
    (B) unity
    (C) constant
    (D) multiple of 1

39. The electrical resistance of a column of 0.5 M KOH solution having diameter is 1 cm and length 78.5 cm is 5000 ohms. The resistance of the above solution is?
    (A) 20 ohm
    (B) 40 ohm
    (C) 30 ohm
    (D) 50 ohm

40. The element that act as anode always has ------value of reduction potential in the ECS
    (A) higher
    (B) lower
    (C) in middle
    (D) no effect of position

41. The shape of $C_2H_5^+$ is
    (A) Triangular planar
    (B) Square planar
    (C) Tetrahedral
    (D) None of the above

42. Which one of the following is the weakest acid?
    (A) $CH_3COOH$
    (B) $CCl_3COOH$
    (C) $CHCl_2COOH$
    (D) $CH_3CH_2COOH$

43. Identify the false statement regarding resonance
    (A) As the number of resonating structures increases, the structure becomes more stable.
    (B) Structure having zero degree of resonance is the most stable one
    (C) Atoms with full octet resonance form are more stable when compared with the one with unfilled octet
    (D) A and C are correct

44. Select the incorrect statement:
    (A) A resonance may sometimes cause $sp^3$ atoms to become $sp^2$ hybridized
    (B) Delocalizing one lone pair causes aromaticity
    (C) one lone pair will be counted as two pi electrons according to Huckel's equation
    (D) Two sigma bonds make up a double bond

45. Which one the following concept is temporary in nature
    (A) Electromeric
    (B) Resonance
    (C) Hyperconjugation
    (D) Inductive

46. For a zero order reaction
   (A) The rate of reaction is zero
   (B) The rate of reaction is independent of the concentration of reactant
   (C) The rate constant of the reaction is zero
   (D) None of the above

47. The role of catalyst is-
   (A) To bring the chemical reaction towards equilibrium
   (B) To Decrease the activation energy of the chemical reaction
   (C) To provide an alternate path, mechanism of the catalyzed reaction
   (D) All of the above

48. The rate law of a reaction is given by; rate = k $[NO]^2$ $[O_2]$, When the initial concentration of NO is tripled, the rate will be?
   (A) Decreases by a factor of nine
   (B) Increases by a factor of three
   (C) Increases by a factor of six
   (D) Increases by a factor of nine

49. A straight line graph will be obtained for a first order reaction having negative slop, if we plot a graph between-
   (A) concentration of reactant and time
   (B) inverse of concentration of reactant and time
   (C) log of concentration of reactant and time
   (D) none of the above

50. The reaction **2A→Product**, follows zero order reaction kinetics, when the initial concentration of A is 0.5M and the half-life period is 8 minutes. What will be the half-life period, if the initial concentration of A is 0.1M?
   (A) 16 minutes
   (B) 8 minutes
   (C) 40 minutes
   (D) 1.6 minutes

51. Which of the following statements is false?
   (A) The repeat unit in natural rubber is isoprene.
   (B) Both starch and cellulose are polymers of glucose.
   (C) Artificial silk is derived from cellulose.
   (D) Nylon-66 is an example of elastomer

52. Which polymers occur naturally?
   (A) Starch and Nylon
   (B) Starch and Cellulose
   (C) Proteins and Nylon
   (D) Proteins and PVC

53. Which of the following is a fully fluorinated polymer?
   (A) Neoprene
   (B) Teflon
   (C) Thiokol
   (D) PVA

54. Polymer formation from monomers starts by
   (A) condensation reaction between monomers
   (B) coordination reaction between monomers
   (C) conversion of monomers to monomer ion by protons
   (D) hydrolysis of monomers

55. Which of the following is a polyamide?
   (A) Teflon
   (B) Nylon-6,6
   (C) Terylene
   (D) Bakelite

# MATHEMATICS

56. Let $f(x) = |x| + |x - 1|$; then
(A) $f(x)$ is continuous both at $x = 0$ and 1.
(B) $f(x)$ is continuous at $x = 0$ but not at $x = 1$.
(C) $f(x)$ is continuous at $x = 1$ but not at $x = 0$.
(D) None of these

57. The function $f(x) = |\sin x|$ is
(A) Continuous and Differentiable.
(B) Discontinuous.
(C) Continuous but not Differentiable.
(D) None of these

58. If $f(x) = |x - 2|$ and $g(x) = f(f(x))$, then $g'(x)$ for $x > 2$ is
(A) 1.          (B) 2.
(C) -1.          (D) None of these

59. The curve given by $x + y = e^{xy}$ has a tangent parallel to the y-axis at the point
(A) (0,1).          (B) (1,1).
(C) (1,0).          (D) (0,0).

60. Maximum value of $f(x) = x^3 + x^2 - x + 1$ on the interval [-2, 1/2]
(A) 2.          (B) -1.
(C) 22/27.     (D) 5.

61. Integral $\int_0^2 \sin \frac{\pi[x]}{2} dx$ ([x] represent greatest integer function of x) is
(A) 0.          (B) -1.
(C) 1.          (D) None of these.

62. The area bounded by the curve $y = x|x|$, x-axis and the ordinates x=1, x=-1 is given by
(A) 0.          (B) 1/3.
(C) 2/3.        (D) None of these.

63. Solution of the differential equation $xdy - ydx = 0$ represents
(A) Parabola whose vertex is at origin
(B) Circle whose center is at origin.
(C) A rectangular hyperbola.
(D) Straight line passing through origin.

64. The inverse of a skew symmetric matrix of odd order is
(A) A symmetric matrix.
(B) A skew symmetric matrix.
(C) Diagonal matrix.
(D) Does not exist.

65. If A is $2 \times 2$ matrix such that $A^2 = 0$, then trace(A) is
(A) 1.          (B) -1.
(C) 0.          (D) None of these.

66. If A is a $4 \times 4$ matrix such that $|A| = 4$, find $|adj\ A|$
(A) 16.          (B) 32.
(C) 128.        (D) 64.

67. If the system of equations

$$x + 2ay + az = 0$$
$$x + 3by + bz = 0$$
$$x + 4cy + cz = 0$$

has a nontrivial solution, then $a, b, c$
(A) satisfy $a + 2b + 3c = 0$.
(B) are in A.P.
(C) are in G.P.
(D) are in H.P.

68. The range of the function

$$f(x) = x^2 + \frac{1}{x^2 + 1}$$

is
(A) $[1, \infty)$.          (B) $[2, \infty)$.
(C) $[3/2, \infty)$.       (D) None of these.

1

69. There are 2 teams with n persons in each. The probability of selecting 2 persons from one team and 1 person from the other team is 6/7. Then n=
(A)3.      (B) 4.
(C)5.      (D)6.

70. Let a set of first 20 natural number is given, the probability if selected number from the set is squared and ends in six is
(A)1/5.      (B)2/5.
(C)3/20.      (D)3/5.

71. Using De Moivre's theorem, write $(1+i)^4$ in the form of $a + ib$
(A)$-4$.      (B)4.
(C)$-4 + 4i$.      (D)$4 - 4i$.

72. If $\omega$ is a cube root of unity, then roots of the equation $(x - 1)^3 + 8 = 0$, are
(A)$-1, \ 1 - 2\omega, \ 1 - 2\omega^2$.
(B)$-1, \ 1 + 2\omega, \ 1 + 2\omega^2$.
(C)$-1, \ -1 + 2\omega, \ -1 - 2\omega^2$.
(D)$-1, \ -1, \ -1$.

73. If $\omega$ is a cube root of unity, such that $n \in N$, $\omega \neq 1$, then $\omega^{3n+1} + \omega^{3n+3} + \omega^{3n+5}$ equals
(A) 0.      (B)1.
(C)-1.      (D)3.

74. Find the value of
$\sin\left(\frac{\pi}{2} - \sin^{-1}\left(\frac{-1}{2}\right)\right)$
(A)1/2.      (B)1/3.
(C)1/4.      (D)1.

75. If the acute angle between the lines $x + ky + 3 = 0$ and $2x + y - 7 = 0$ is $\tan^{-1}(3/4)$, then $k$ is
(A)1.      (B)2.
(C)3.      (D)4.

76. A point inside the circle $x^2 + y^2 + 3x - 3y + 2 = 0$ is
(A)$(-1, 3)$.      (B)$(-2, 1)$.
(C)$(2, 1)$.      (D)$(-3, 2)$.

77. In how many ways 4 boys and 3 girls can be seated in a row so that they are alternate
(A)144.      (B)288.
(C)12.      (D)256.

78. Flat surface in which two points are joined by using straight line is classified as
(A)Line.      (B)Ray.
(C)Plane.      (D)Intersecting Line.

79. Find the vector $u \times v$ where $u = [3, , -1, 1]$ and $v = [2, 5, 1]$
(A)$[-6, -1, 17]$. (B)$[-6, 1, 17]$.
(C)$[4, 5, 13]$.      (D)$[-4, -1, 15]$.

80. Find non zero scalars $\alpha$, $\beta$ such that for every vectors $a$ and $b$
$\alpha(a + 2b) - \beta a + (4b - a) = 0$
(A)$\alpha = 2, \ \beta = 1$.      (B)$\alpha = -2, \ \beta = -3$.
(C)$\alpha = 1, \ \beta = 3$.      (D)$\alpha = -2, \ \beta = 3$.

# UPES University of Petroleum & Energy Studies
## Warmup Test Answer Sheet

| Student Name: | | | SAP ID: 5000 |
|---|---|---|---|
| Branch: | | | Room No: |
| Enrollment No: | R | | Date: 05.Aug.2017 |

| Q.No | Answer | Marks | Q.No | Answer | Marks | Q.No | Answer | Marks |
|---|---|---|---|---|---|---|---|---|
| Q1 | B | Sec-1: | Q31 | B | Sec-5: | Q56 | A | Sec-10: |
| Q2 | D | | Q32 | C | | Q57 | C | |
| Q3 | B | | Q33 | A | | Q58 | A | |
| Q4 | A | | Q34 | C | | Q59 | C | |
| Q5 | B | | Q35 | A | | Q60 | A | |
| Q6 | C | | Q36 | A | Sec-6: | Q61 | C | |
| Q7 | C | | Q37 | B | | Q62 | C | |
| Q8 | A | Sec-2: | Q38 | A | | Q63 | D | |
| Q9 | A | | Q39 | D | | Q64 | D | Sec-11: |
| Q10 | B | | Q40 | B | | Q65 | C | |
| Q11 | A | | Q41 | A | Sec-7: | Q66 | D | |
| Q12 | C | | Q42 | D | | Q67 | D | |
| Q13 | B | | Q43 | B | | Q68 | A | |
| Q14 | B | | Q44 | D | | Q69 | B | |
| Q15 | B | | Q45 | A | | Q70 | A | |
| Q16 | B | Sec-3: | Q46 | B | Sec-8: | Q71 | A | Sec-12: |
| Q17 | B | | Q47 | D | | Q72 | A | |
| Q18 | B | | Q48 | D | | Q73 | A | |
| Q19 | A | | Q49 | C | | Q74 | A | |
| Q20 | B | | Q50 | C | | Q75 | B | Sec-13: |
| Q21 | D | | Q51 | B | Sec-9: | Q76 | B | |
| Q22 | A | | Q52 | B | | Q77 | A | |
| Q23 | B | Sec-4: | Q53 | B | | Q78 | C | |
| Q24 | A | | Q54 | A | | Q79 | A | |
| Q25 | C | | Q55 | B | | Q80 | B | |
| Q26 | A | | | | | | | |
| Q27 | B | | | | | Physics Total Marks: | | |
| Q28 | D | | | | | Chemistry Total Marks: | | |
| Q29 | C | | | | | Mathematics Total Marks: | | |
| Q30 | A | | | | | Grand Total: | | |

# MATH-1001

| S.No | Roll No | SAP ID | Name of the Student | Branch | Mathematics-Total Marks | Name of the Student Mentor |
|------|---------|--------|---------------------|--------|-------------------------|----------------------------|
| 1 | R160217027 | 500061423 | JAYESH SETH | ADE 2017 | 6 | |
| 2 | R160217034 | 500060686 | MOHIT AGRAWAL | ADE 2017 | 6 | |
| 3 | R820217021 | 500061093 | ANIMESH KRISHNAN | APE GAS 2017 | 2 | Dr Anurag Shukla |
| 4 | R820217067 | 500061452 | PIYUSH PRADHAN | APE GAS 2017 | 6 | |
| 5 | R820217078 | 500061773 | PUSHPESH RANJAN | APE GAS 2017 | 6 | |
| 6 | R820217131 | 500060021 | VIKRANT THAKUR | APE GAS 2017 | 6 | |
| 7 | R820217133 | 500060287 | VISHESH SHARMA | APE GAS 2017 | 6 | |
| 8 | R870217037 | 500060864 | ARJIT AGARWAL | APE UP 2017 | 0 | |
| 9 | R870217044 | 500060063 | ASHUTOSH RAWAT | APE UP 2017 | 0 | Dr Maheshwar Pathak |
| 10 | R870217048 | 500060883 | BALRAM CHOUDHARY | APE UP 2017 | 0 | |
| 11 | R870217051 | 500060872 | DARPAN SINGH | APE UP 2017 | 0 | |
| 12 | R870217061 | 500060675 | HARSH KATIYAR | APE UP 2017 | 0 | |
| 13 | R870217073 | 500060016 | KUMAR VATSAL | APE UP 2017 | 0 | |
| 14 | R870217075 | 500060819 | MANAS BHASIN | APE UP 2017 | 0 | |
| 15 | R870217076 | 500060100 | MANAV KUMAR | APE UP 2017 | 0 | |
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| 17 | R290217012 | 500062363 | GHANSHYAM RAI | ASE 2017 | 6 | |
| 18 | R290217057 | 500062574 | TEJASHVINI BATHEJA | ASE 2017 | 5 | |
| 19 | R890217008 | 500063805 | SUNIDHI BATRA | ASE 2017 | 6 | |
| 20 | R890217016 | 500060198 | ANURAG RANA | ASE+AVE 2017 | 5 | Dr Mrinal Jana |
| 21 | R890217038 | 500062497 | ISHAN SINGH | ASE+AVE 2017 | 5 | |
| 22 | R900217015 | 500062241 | SATYA DASH | ASE+AVE 2017 | 6 | |
| 23 | R900217018 | 500060000 | AMBUJ TIWARI | Chemical 2017 | 4 | |
| 24 | R900217104 | 500061449 | ANSHIKA ANNU | Chemical 2017 | 6 | |
| 25 | R680217016 | 500060219 | SHIVAM SAMANT | Chemical 2017 | 3 | Dr Shweta Sachdeva |
| 26 | R680217017 | 500062939 | HARSHIT GAUTAM | Civil 2017 | 6 | |
| 27 | R680217041 | 500060005 | HIMANSHU KUMAR | Civil 2017 | 6 | |
| 28 | R680217047 | 500062178 | UTKARSH ARUN | Civil 2017 | 5 | |
| 29 | R173217009 | 500062429 | YASH SONI | Civil 2017 | 6 | |
| 30 | R260217001 | 500062426 | DEVADEEP CHAKRABORTY | ECE 2017 | 1 | |
| 31 | R260217045 | 500062531 | AASHI DESHPANDE | FSE 2017 | 6 | Dr Monika Manglik |
| 32 | R620217017 | 500061966 | SUDHANSHU GUPTA | FSE 2017 | 5 | |
| 33 | R490217006 | 500061109 | NEETI MAHAJAN | GIE 2017 | 6 | |
| 34 | R490217023 | 500062934 | APURV PREM | GSE 2017 | 5 | |
| 35 | R113217005 | 500063064 | SK ARBAZ ALI | GSE 2017 | 6 | |
| 36 | R113217039 | 500062968 | AKHIL BHARDWAJ | Mechanical 2017 | 6 | |
| 37 | R113217042 | 500062987 | JAI KUMAR | Mechanical 2017 | 6 | Dr Divya Ahluwalia |
| 38 | R113217048 | 500062851 | MANSI SRIVASTAVA | Mechanical 2017 | 6 | |
| 39 | R880217002 | 500061528 | NINAD PANCHAL | Mechanical 2017 | 5 | |
| 40 | R136217008 | 500062623 | ABHINAV MUDGAL | Mechatronics 2017 | 5 | |
| 41 | | 500062995 | SANJOY GHOSH | Mining 2017 | 5 | Dr S K Banerjee |

Slow learners Identified on the basis of Marks less than 30%. Mentors assigned to them

# MATH 1002

| | Roll No | SAP ID | Name of the Student | Branch | Mathematics-Total Marks | Name of the Student Mentor |
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| 2 | R103217028 | 500063517 | AYUSHI GUSAIN | CS BAO 2017 | 5 | |
| 3 | R103217032 | 500063558 | DEEPAK . | CS BAO 2017 | 5 | |
| 4 | R103217035 | 500062828 | DHANANJAY KHAJURIA | CS BAO 2017 | 5 | |
| 5 | R103217043 | 500062924 | GUDDY KUMARI | CS BAO 2017 | 5 | Dr Shashank Chaube |
| 6 | R103217055 | 500062393 | KOMALPREET KAUR | CS BAO 2017 | 5 | |
| 7 | R103217056 | 500062707 | KSHITIJ JINDAL | CS BAO 2017 | 5 | |
| 8 | R103217059 | 500061589 | MADHUR RAKHEJA | CS BAO 2017 | 5 | |
| 9 | R103217064 | 500062965 | NAMRATA AGARWAL | CS BAO 2017 | 5 | |
| 10 | R103217065 | 500062626 | NAVNEEL PUSHONG | CS BAO 2017 | 5 | Dr Pratibha Joshi |
| 11 | R103217066 | 500062731 | NITESH ... | CS BAO 2017 | 5 | |
| 12 | R103217068 | 500062547 | PARAS . | CS BAO 2017 | 4 | |
| 13 | R103217072 | 500063439 | POOJA BATHLA | CS BAO 2017 | 4 | |
| 14 | R103217083 | 500062971 | RHITIK . | CS BAO 2017 | 5 | |
| 15 | R103217091 | 500062845 | SAMANTA AGARVAL | CS BAO 2017 | 5 | Dr Reshu Gupta |
| 16 | R103217096 | 500062592 | SHAKSHAM SISODIA | CS BAO 2017 | 3 | |
| 17 | R103217100 | 500063082 | SHIRAZ HUSSAIN | CS BAO 2017 | 5 | |
| 18 | R103217101 | 500060074 | SHIVAM KUMAR | CS BAO 2017 | 3 | |
| 19 | R103217102 | 500063089 | SHIVANGI SHARMA | CS BAO 2017 | 5 | |
| 20 | R103217105 | 500062952 | SHUBHANKAR JAISWAL | CS BAO 2017 | 5 | |
| 21 | R103217106 | 500063452 | SHWETA RAWAT | CS BAO 2017 | 4 | |
| 22 | R103217109 | 500062397 | SOMYA SHARMA | CS BAO 2017 | 5 | Dr Akmal Husain |
| 23 | R103217110 | 500063445 | SONA JAIN | CS BAO 2017 | 5 | |
| 24 | R103217111 | 500062738 | SUN GAJIWALA | CS BAO 2017 | 3 | |
| 25 | R103217120 | 500062545 | TWINKLE BHALLA | CS BAO 2017 | 4 | |
| 26 | R103217121 | 500061932 | UDISHA KUMAR | CS BAO 2017 | 2 | |
| 27 | R103217124 | 500062787 | VANSHIKA SINGHAL | CS BAO 2017 | 5 | Dr Anupam Bhandari |
| 28 | R103217127 | 500063330 | VEDANT DARUKA | CS BAO 2017 | 5 | |
| 29 | R103217128 | 500062532 | VEDANT MITTAL | CS BAO 2017 | 5 | |
| 30 | R103217130 | 500062523 | VIDIT NANU | CS BAO 2017 | 5 | |
| 31 | R103217133 | 500060079 | VISHESH GOEL | CS BAO 2017 | 5 | Dr Pradeep Malik |
| 32 | R103217135 | 500062445 | YASH GOEL | CS BAO 2017 | 5 | |
| 33 | R103217141 | 500063076 | HARSHITA GUPTA | CS BAO 2017 | 5 | |
| 34 | R133217005 | 500062514 | HARSH DAHIYA | CS BFSI 2017 | 4 | |
| 35 | R133217006 | 500063007 | MINAL SAHU | CS BFSI 2017 | 5 | |
| 36 | R133217012 | 500062782 | SANYA CHHABRA | CS BFSI 2017 | 3 | |
| 37 | R133217013 | 500062334 | SAUMYA AHUJA | CS BFSI 2017 | 5 | |
| 38 | R133217014 | 500062282 | SAUMYA SRIVASTAVA | CS BFSI 2017 | 5 | |
| 39 | R172217016 | 500061930 | AYUSH KUMAR | CS Bigdata 2017 | 2 | Dr Pankaj Kumar Mishra |
| 40 | R172217025 | 500060242 | KARTIKAY BANSAL | CS Bigdata 2017 | 5 | |
| 41 | R172217026 | 500061543 | KOMPAL SITHTA | CS Bigdata 2017 | 4 | |
| 42 | R172217042 | 500061994 | RITIKA SHARMA | CS Bigdata 2017 | 4 | |
| 43 | R172217056 | 500061371 | URVEE KUMAR | CS Bigdata 2017 | 5 | |
| 44 | R172217059 | 500060257 | VASUNDHARA GARG | CS Bigdata 2017 | 5 | Dr Girish Dobhal |
| 45 | R110217098 | 500061792 | NIKHIL KUMAR | CS CCVT 2017 | 4 | |
| 46 | R110217103 | 500060041 | NIKITA KUKRETI | CS CCVT 2017 | 5 | |
| 47 | R110217104 | 500061707 | NISHANT SHUKLA | CS CCVT 2017 | 4 | |
| 48 | R110217112 | 500061057 | PRASHANSA GUPTA | CS CCVT 2017 | 4 | |
| 49 | R110217130 | 500061454 | S MRINAL | CS CCVT 2017 | 4 | |
| 50 | R110217148 | 500061171 | SHIKHAR SHUKLA | CS CCVT 2017 | 3 | |
| 51 | R110217191 | 500061708 | ANMOL SRIVASTAVA | CS CCVT 2017 | 5 | |
| 52 | R134217011 | 500061933 | ADRISH MITRA | CS CSF 2017 | 5 | Dr Mithilesh Singh |
| 53 | R134217013 | 500062017 | AKHIL SINGH | CS CSF 2017 | 4 | |
| 54 | R134217021 | 500061517 | AMAN JAIN | CS CSF 2017 | 5 | |
| 55 | R134217024 | 500061409 | ANADI PANDEY | CS CSF 2017 | 5 | |
| 56 | R134217069 | 500060161 | KARTIK CHAUHAN | CS CSF 2017 | 5 | |
| 57 | R134217081 | 500061643 | MANSI BISHT | CS CSF 2017 | 4 | |
| 58 | R134217087 | 500062101 | MOHIT YADAV | CS CSF 2017 | 5 | |
| 59 | R134217106 | 500061997 | PRANAY SURI . | CS CSF 2017 | 4 | Dr Sandeep Dixit |
| 60 | R134217108 | 500061936 | PRANJAL SINGH | CS CSF 2017 | 5 | |
| 61 | R134217109 | 500060027 | PRASHANT SINGH | CS CSF 2017 | 5 | |
| 62 | R134217120 | 500062106 | RISHAV SHARMA | CS CSF 2017 | 5 | |
| 63 | R134217128 | 500061904 | ROMIL VERMA | CS CSF 2017 | 5 | |
| 64 | R134217135 | 500061056 | SAKSHAM BHUTANI | CS CSF 2017 | 5 | |
| 65 | R134217161 | 500061906 | SOMYA AGRAWAL | CS CSF 2017 | 5 | |
| 66 | R134217184 | 500061992 | VIVEK JAISWAL | CS CSF 2017 | 1 | Dr Mukesh Kumar Awasthi |
| 67 | R171217010 | 500061718 | ANUBHAV SINGH | CS DevOps 2017 | 5 | |
| 68 | R171217013 | 500060176 | ASHISH RAJBHAR | CS DevOps 2017 | 3 | |
| 69 | R171217017 | 500060134 | GARISHMA VIRK | CS DevOps 2017 | 5 | |
| 70 | R171217028 | 500062098 | KESHAV MISHRA | CS DevOps 2017 | 5 | |
| 71 | R171217049 | 500060009 | RACHIT CHAUHAN | CS DevOps 2017 | 5 | |

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|---|---|---|---|---|---|
| | R171217056 | 500062293 | SHRISTI SRIVASTAVA | CS DevOps 2017 | 5 | |
| 3 | R114217002 | 500063124 | ANISH MITTAL | CS ERA 2017 | 4 | Dr Sangeeta Pant |
| 74 | R114217003 | 500062237 | ANSHUMAN RANJAN | CS ERA 2017 | 2 | |
| 75 | R114217007 | 500063382 | VARUN AGARWAL | CS ERA 2017 | 3 | |
| 76 | R142217030 | 500063454 | VATSAL CHATURVEDI | CS GG 2017 | 4 | |
| 77 | R164217019 | 500060306 | HARDIKI SINGHAL | CS IoT 2017 | 5 | |
| 78 | R164217025 | 500062727 | KARTIKEY SHRINGI | CS IoT 2017 | 5 | |
| 79 | R164217030 | 500063385 | MAHAK GUPTA | CS IoT 2017 | 5 | |
| 80 | R164217031 | 500062087 | NANDAN BHARTI | CS IoT 2017 | 4 | Dr Sanoj Kumar |
| 81 | R164217033 | 500062280 | NIHIT GARG | CS IoT 2017 | 4 | |
| 82 | R164217037 | 500062417 | PRACHI JAIN | CS IoT 2017 | 5 | |
| 83 | R164217039 | 500062691 | PRANJAL RAI | CS IoT 2017 | 5 | |
| 84 | R164217060 | 500062929 | VIKRANT MALIK | CS IoT 2017 | 5 | |
| 85 | R164217067 | 500063753 | MUDRIKA TRIVEDI | CS IoT 2017 | 5 | Dr Manoj Kumar Singh |
| 86 | R111217006 | 500062421 | ABHISHEK VASHISHT | CS IT Infra 2017 | 5 | |
| 87 | R111217008 | 500062823 | AISHWARYA CHANDRA | CS IT Infra 2017 | 4 | |
| 88 | R111217011 | 500060144 | ANANYA MALASI | CS IT Infra 2017 | 5 | |
| 89 | R111217024 | 500062729 | NIVEDITA RAJ | CS IT Infra 2017 | 5 | |
| 90 | R111217033 | 500063036 | SHAVYA JAIN | CS IT Infra 2017 | 3 | |
| 91 | R111217035 | 500063431 | SONU PAL | CS IT Infra 2017 | 5 | |
| 92 | R111217037 | 500062333 | TEJASWA NAIK | CS IT Infra 2017 | 1 | Dr Ravi Kiran Maddali |
| 93 | R163217003 | 500063128 | Vinayak Sharma | CS MC 2017 | 5 | |
| 94 | R163217013 | 500063074 | MAYUR PANDE | CS MC 2017 | 5 | |
| 95 | R610217003 | 500062604 | YASHOVARDHAN SHAKTAWAT | CS MC 2017 | 5 | |
| 96 | R610217004 | 500062802 | ANSHIKA SHARMA | CS MT 2017 | 3 | |
| 97 | R610217014 | 500062722 | ARCHIT SINGH | CS MT 2017 | 5 | |
| 98 | R970217010 | 500062961 | NISHTHA SAGAR | CS MT 2017 | 5 | |
| 99 | R970217012 | 500063383 | APARNA UPADHYAY | CS OG 2017 | 5 | Dr R K Pavan Kumar Pannala |
| 100 | R970217014 | 500062536 | ARSHAD ALI | CS OG 2017 | 3 | |
| 101 | R970217016 | 500062418 | ASHISH KUMAR | CS OG 2017 | 2 | |
| 102 | R970217021 | 500062937 | AYUSH KUMAR | CS OG 2017 | 4 | |
| 103 | R970217035 | 500062459 | KARAN PRATAP SINGH | CS OG 2017 | 4 | |
| 104 | R970217044 | 500063329 | SARIKA GANGWAR | CS OG 2017 | 3 | |
| 105 | R970217048 | 500063050 | SRISHTI AGNIHOTRI | CS OG 2017 | 4 | Dr Nitin Uniyal |
| 106 | R100217004 | 500061603 | VIVEK RAJ | CS OG 2017 | 5 | |
| 107 | R100217016 | 500063881 | Yuvraj Singh | CS OG 2017 | 5 | |
| 108 | R100217025 | 500063909 | Siddharth chauhan | CS OG 2017 | 5 | |
| 109 | R100217042 | 500062444 | AKSHIT CHAUHAN | CS OSS 2017 | 4 | |
| 110 | R100217052 | 500062948 | AYUSH SINGH | CS OSS 2017 | 3 | |
| 111 | R100217065 | 500062498 | GARIMA DHALL | CS OSS 2017 | 4 | |
| 112 | R100217068 | 500062818 | NEERAJ SINGH | CS OSS 2017 | 5 | Dr Mukesh Kumar Singhal |
| 113 | R100217073 | 500062944 | PURSHARTH RAGHUVANSHI | CS OSS 2017 | 3 | |
| 114 | R100217078 | 500062535 | SAJAL SAXENA | CS OSS 2017 | 4 | |
| 115 | | 500062726 | SARTHAK GOYAL | CS OSS 2017 | 5 | |
| 116 | | 500060004 | SHRISTI NEGI | CS OSS 2017 | 5 | |
| 117 | | 500062034 | TANISH JAIN | CS OSS 2017 | 5 | Dr Amit Kumar Singh |