

KATHMANDU UNIVERSITY
End Semester Examination [C]
November, 2017

Level : B.E./B. Sc./B. Tech
Year : I

Course : MATH 101
Semester : I

Exam Roll No. :

Time: 30 mins.

F. M. : 20

Registration No.:

Date **NOV: 19 2017**

SECTION "A"

[10 Q. \times 1 = 10 marks]

Fill in the blanks space(s) by most appropriate word(s) or symbol(s).

1. A function $y = f(x)$ is odd function if-----.
2. The domain of the function $f(x) = \sqrt{x-2}$ is -----.
3. The vectors $\vec{e}_1 = (1,0)$ and $\vec{e}_2 = (0,1)$ are standard ----- in R^2 .
4. The value of $\frac{d}{dx} \log(\sin^2 x)$ -----.
5. The slope of normal to the curve $x^2 + y^2 = 36$ at $(2,6)$ is given by-----.
6. If 5 and 3 are number of columns and rank of a matrix respectively. The nullity of matrix is -----.
7. If $\lim_{x \rightarrow a^+} f(x) \neq \lim_{x \rightarrow a^-} f(x)$. Then function $y = f(x)$ has a ----- discontinuity at $x = a$.
8. The set of all linear combinations of column vectors of a matrix A is called ----- of matrix A.
9. If $f(x)$ is a real valued function, then $\int \frac{f'(x)}{f(x)} dx =$ -----.
10. $\lim_{x \rightarrow 2^+} \frac{[x]}{x} =$ -----.

SECTION: "B"

[10 Q. \times 1 = 10 marks]

Pick the correct answer.

11. The series $\sum_{n=1}^{\infty} \frac{1}{n^x}$ is converges if -----.
[$x < 1$; $x \leq 1$; $x > 1$; $x = 1$]
12. A function $f(x)$ will have a point of inflection at the point when-----
[$f''(x) > 0$; $f''(x) = 0$; $f'(x) > 0$; $f'(x) = 0$]
13. The average value of $\frac{1}{x^2}$ on the closed interval $[1,5]$ is -----.
[$1/5$; $2/5$; $\ln 5$; $\ln 3/2$].

14. The value of $f(x) = 5 - 2x - x^2$ is maximum when-----
 [$x = -10$; $x=1$; $x = -3$; $x = -1$]
15. A convergent series is called -----
 if it is not converges absolutely.
 [absolute convergent; divergent; convergent; conditionally convergent]
16. The graph of the function $y = x^2$ is symmetric about-----
 [y-axis; x-axis; line $y = x$ origin]
17. The vertical asymptote to the curve $y = \frac{x^2-3}{2x-4}$ is -----
 [$y = \frac{x}{2} + 1$; $y = \frac{x}{2} - 1$; $x = 2$; $y = 2$]
18. The value of $\frac{d^n}{dx^n}(e^{nx})$ is -----
 [$n^n e^{nx}$; $n! e^{nx}$; ne^{nx} ; $n^n e^n$]
19. If $f'(x) = \frac{1}{\sqrt{1-x^2}}$, $f(0) = 0$. Then $f(x) =$ -----
 [$\sqrt{1-x^2}$; $\sqrt{1+x^2}$; $\text{Sin}x$; $\text{Sin}^{-1}x$]
20. The value of $\int \log x dx$ is -----
 [$\frac{1}{x} + c$; $x \log x - x + c$; $x \log x + x + c$; $\frac{1}{x}$]



KATHMANDU UNIVERSITY

OFFICE OF THE CONTROLLER OF EXAMINATIONS

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December 26, 2017

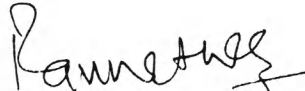
NOTICE

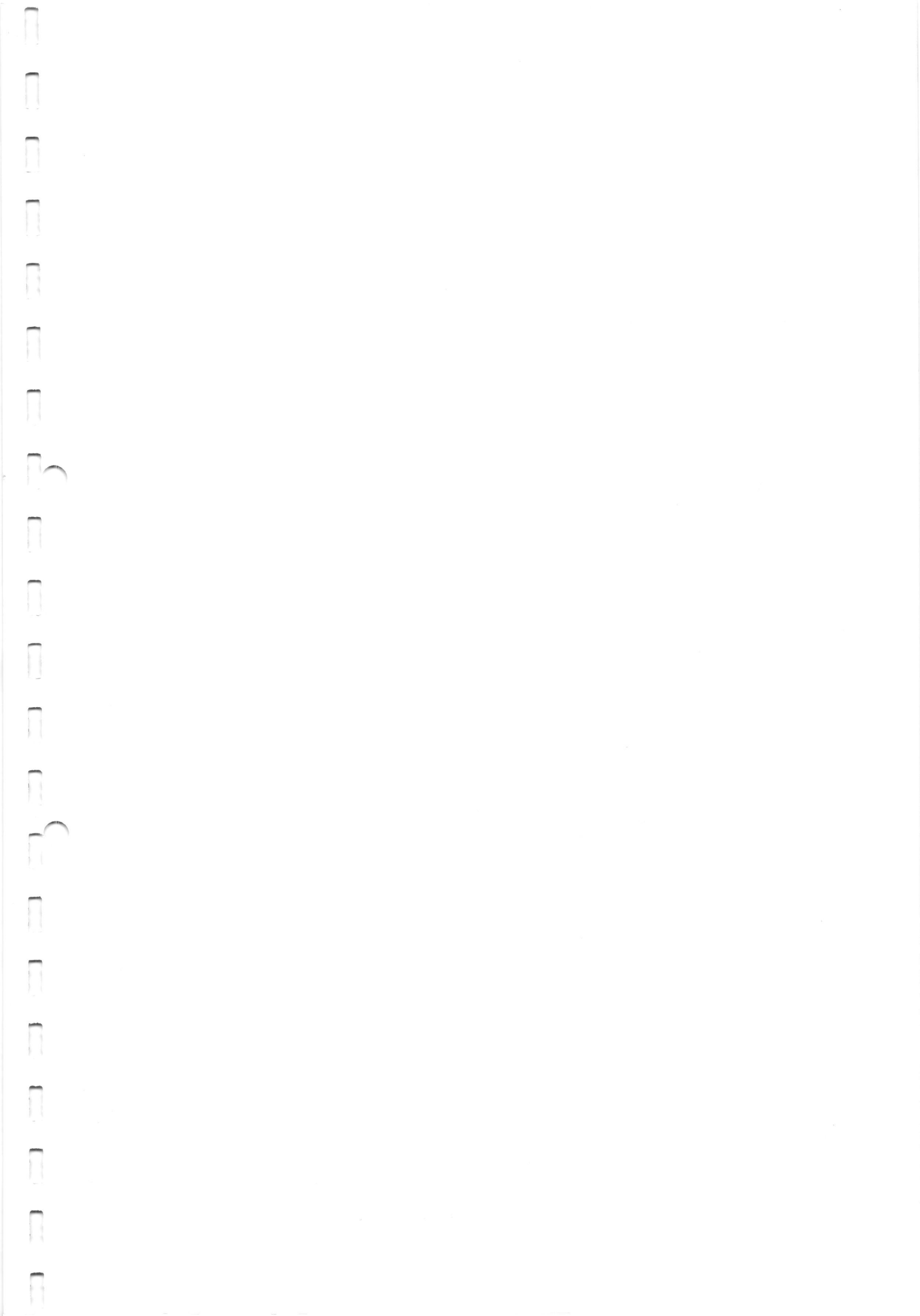
End-Semester Compartmental Examinations of B.E./B.Sc./B.Pharm./B.Tech. students will be held according to the following schedule.

| Date | Day | Courses |
|------------------|-----------|--|
| January 5, 2018 | Friday | MATH 104, MATH 102, MEEG 202, EEEG 309, CIEG 308, BIOT 307, ENVS 303, GEOM 313, MEEG 309, PHAR 315 |
| January 7, 2018 | Sunday | BIOL 206, BIOT 207, CIEG 208, GEOM 204, INAN 211, ETEG 303, CIEG 312, MEEG 306, ENGG 112, CHEM 102, MATH 208, PHYS 311, BIOT 308, ENVS 331, PHAR 311, CIEG 317, GEOM 315 |
| January 8, 2018 | Monday | BIOT 209, CIEG 212, CIEG 209, MEEG 206, COMP 232, COMP 201, COMP 204, CHEM 203, COMP 302, COMP 315, CIEG 313 |
| January 9, 2018 | Tuesday | COMP 116, COMP 102, MGTS 301, COEG 304, EPEG 318, ETEG 305, CIEG 309, PHYS 312, BIOT 309 |
| January 10, 2018 | Wednesday | MEEG 207, BIOT 210, COMP 234, COMP 304, COMP 323, MEEG 316, CIEG 314, ENVS 306, GEOM 319 |
| January 11, 2018 | Thursday | PHYS 102, EEEG 202, COEG 301, PHYS 313, BIOT 306, COMP 314, CIEG 310, MATH 322, COMP 409, MEPP 433 |
| January 12, 2018 | Friday | BIOT 206, ENVE 205, MATH 207, PHYS 212, PHAR 212, ENVS 318, ENVS 328, MGTS 302, COMP 341, MEEG 318 |
| January 14, 2018 | Sunday | ENVE 101, PHAR 111, BIOT 101, MATH 103, MCSC 202, PHYS 314, BIOT 305, COMP 317, COMP 342, MEEG 317, PHAR 316 |
| January 16, 2018 | Tuesday | ENGT 102, ENVS 101, STAT 101, COMP 202, EEEG 215, CHEM 212, MCSC 201, BIOT 208, PHYS 213, MEEG 301, COMP 306, COMP 316 |
| January 17, 2018 | Wednesday | MEEG 308 MEPP-403 |

Examination Time : 11.00 A.M. to 2.00 P.M.

Examination Center : Kathmandu University, Dhulikhel.


Prof. Panna Thapa, Ph. D.
Controller of Examinations





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November 5, 2017

NOTICE.

Final Year End-Semester Compartmental/ GPA make-up Examinations of B.E./B.Sc./B.Pharm. - /B.Tech. students will be held according to the following schedule.

| Date | Day | Courses |
|-------------------|-----------|--|
| November 15, 2017 | Wednesday | COEG 402, ETEG 417, BIOT 407, MEEG 301 |
| November 17, 2017 | Friday | MEEG 315, MGTS 301, COEG 304, MEPP 412, EEEG 207, EEEG 313, COMP 421 |
| November 19, 2017 | Sunday | MGTS 403, EEEG 314, MATH 101, PHAR 303 |

Examination Time : 11.00 A.M. to 2.00 P.M.
Examination Center : Kathmandu University, Dhulikhel.

Panna Thapa
Prof. Panna Thapa, Ph. D.
Controller of Examinations

Special compartment for Convocation

