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Code No.: 14265 N/O

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD Accredited by NAAC with A++ Grade

B.E. IV-Semester Main & Backlog Examinations, July-2023

Operating Systems

(Common to CSE & AIML)

Time: 3 hours

Max. Marks: 60

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

Part-A $(10 \times 2 = 20 \text{ Marks})$

| Q. No. | Stem of the question $Stem of the question$ | | | | | |
|--------|--|---------|-----|-----|----|---|
| 1. | What is Operating system? Draw on about | | | L | CO | P |
| | | f | 2 | 1 | 1 | |
| 2. | How many times following code will print Hello-1? | 1 | | 100 | | |
| | #include <stdio.h></stdio.h> | 1 | 2 2 | 2 | 1 | 2 |
| | #include <sys types.h=""></sys> | | | | | |
| | int main() | 17 | | | | |
| | 1000 1000 | | | | | |
| | if (fork() && fork()) | | | | | |
| | fork(); | | | | | |
| | printf ("Hello-1\n"); return 0; * | | | | | |
| | } | | | | | |
| 3. | | 187-194 | | | | |
| | What is starvation? Which scheduling algorithm results in starvation? | 2 | 1 | 2 | | 1 |
| 4. | A 500KB memory is managed 1 | | 2 | | | 1 |
| | 160KB. What is the smallest alleget in processes of size 100KB and | 2 | 2 | 2 | | 2 |
| | denied? denied? that could be | | | | | |
| 5. | What is semaphore? At a particular time of computation, the value of a counting semaphore is 7. Then 20 P operations and 16 M. | | | | | |
| 1 | counting semaphore is 7. Then 20 P operations and 15 V operations were | 2 | 2 | 3 | 2 | 2 |
| | resulting value of the semanhore? | | | | | |
| d | deadlock detection methods to handle deadlock? | 2 | 1 | 3 | 1 | |
| . V | What is a file? List out the fields in File control Block (FCB)? | | | | | |
| N | What is RAID? Differentiate RAID levels (0.1) | 2 | 1 | 4 | 1 | |
| | | 2 | 2 | 4 | 2 | |
| Li | ist out the components of Windows operating system? | | | | | |
| Li | ist out seven activity life cycle methods is a | 2 | 1 | 5 | 1 | |
| A | ctivity life cycle? The cycle methods with flowchart of Android | 2 | 1 | 5 | 1 | 1 |

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| | | | | | | $5 \times 8 = 4$ | | | | | | 4 | 2 | | 1 | 2 |
|-----|--------------|---|---|--|--|---|---|--|---|---|--|-------|---|---|---|---|
| 1. | l t | List and expl to (i) the use | rs and | d (11) sy | stems 1 | isen. | | | | | | 4 | 2 | | | |
| | b) 5 | Suppose that With N processes not waiting waiting for and 80% average. | t a processes are w | in men vaiting : /O, (iii | spends and an income of the property of the pr | a fraction once, do note, (ii) the probabil | e probability the | ability that at least With 4 p | that all p | proce | esses are cess not | 4 | 3 | | 1 | 3 |
| 2 | 2. a) | What is pag | ge faul | lt? Exp | olain the | e proced | dural s | iteps for | r page-fa | ault v | with neat | 4 | 2 | 2 | 2 | 2 |
| | b) | Give Gantt for the follo Pre-emptive integer value | chart owing | g set of (ii) Pre | e-empti | ve prior (y) | rity scl | hedulin | ig. (Assu | ime h | ing Time vith Non- nigher the | 4 | | 3 | 2 | 2 |
| | | Process | - | Arriva (in r | l time | CPU | (in ms | Time s) | Priori | ity | | | | | | |
| | | P1 | - | (111.1 | | | 15 | | 2 | | - | | | | | |
| | | P2 | | - | 2 | | 3 | | 1 | | - | | | | | |
| | | P3 | | | 5 | | 5 | | 5 | | - | | | | | |
| | | P4 | | 1000000 | 6 | | 8 | | 4 | | 4 | | | | | |
| 1 | | 1.1 | 1 | - | | | 10 | | 1 ~ | | 1 | 4 | | | | |
| | | P5 | | | 7 | to otrest | 12 | d how | dining pl | | opher's | 4 | ŀ | 3 | 3 | 2 |
| 1 | 13. a) b) | What is a problems | has be a systypes | tor? Exeen solution with the control of the control | eplain it lyed usi ith five R2, R3> | proces | ure and itor? sses <i td="" time<=""><td>P1, P2, T=0, the</td><td>dining pl</td><td>hiloso P5> ving s</td><td>and three</td><td>ee 4</td><td>4</td><td>3</td><td>3</td><td></td></i> | P1, P2, T=0, the | dining pl | hiloso P5> ving s | and three | ee 4 | 4 | 3 | 3 | |
| 1 | | What is a problems Consider resource | a systypes m has | tor? Execution een solutem with the control of the | eplain it lyed usi ith five R2, R3> | proces | ure and itor? | P1, P2, T=0, the | dining pl P3, F4, te follow | hiloso P5> ving s | and three and th | ee 4 | | | | |
| 1 | | What is a problems Consider resource the system | a systypes m has | tor? Exeen solution with | eplain it lyed usi ith five R2, R3> | proces | ure and itor? sses <i td="" time<=""><td>P1, P2, T=0, the</td><td>dining pl P3, F4, the follow</td><td>hiloso P5> ving s lable R2</td><td>and three snapshot of R3</td><td>ee 4</td><td></td><td></td><td></td><td></td></i> | P1, P2, T=0, the | dining pl P3, F4, the follow | hiloso P5> ving s lable R2 | and three snapshot of R3 | ee 4 | | | | |
| 1. | | What is a problems Consider resource to the system Process | a systypes m has | tor? Executed stem with the stem with the stem to the | explain it lyed usi ith five R2, R3> aken. | proces and at Max | ure and itor? sses <i td="" time?<=""><td>P1, P2, T=0, the</td><td>dining pl P3, F4, te follow</td><td>hiloso P5> ving s</td><td>and three and th</td><td>ee 4</td><td></td><td></td><td></td><td></td></i> | P1, P2, T=0, the | dining pl P3, F4, te follow | hiloso P5> ving s | and three and th | ee 4 | | | | |
| 1 | | What is a problems Consider resource to the system Process P1 | a systypes m has Allo R1 | tor? Executed stem with the stem with the stem with the stem to th | explain it lived usi ith five R2, R3> aken. | proces and at Max R1 | ure and itor? sses <i imum="" r2<="" td="" time=""><td>P1, P2, T=0, the</td><td>dining pl P3, F4, te follow Avail</td><td>hiloso P5> ving s lable R2</td><td>and three snapshot of R3</td><td>ee 4</td><td></td><td></td><td></td><td></td></i> | P1, P2, T=0, the | dining pl P3, F4, te follow Avail | hiloso P5> ving s lable R2 | and three snapshot of R3 | ee 4 | | | | |
| 17. | | What is a problems Consider resource to the system Process P1 P2 | a systypes m has Allo R1 1 2 | tor? Exteen solution with the cated R2 | explain it lived usi ith five R2, R3> aken. | e proces and at Max R1 4 3 | ure and itor? sses <i **="" 3<="" r2="" td="" time="" timum=""><td>P1, P2, T=0, the R3</td><td>dining pl P3, F4, te follow Avail</td><td>hiloso P5> ving s lable R2</td><td>and three snapshot of R3</td><td>ee 4</td><td></td><td></td><td></td><td></td></i> | P1, P2, T=0, the R3 | dining pl P3, F4, te follow Avail | hiloso P5> ving s lable R2 | and three snapshot of R3 | ee 4 | | | | |
| | | What is a problems Consider resource the system Process P1 P2 P3 | a systypes m has Allo R1 1 2 4 | tor? Executed stem with the stem with the stem to the | xplain it lived usi ith five R2, R3> aken. R3 2 2 1 | mg mon proces and at Max R1 4 3 | ure and itor? sses < Itime imum R2 3 2 0 | P1, P2, T=0, the R3 3 2 | dining pl P3, F4, te follow Avail | hiloso P5> ving s lable R2 | and three snapshot of R3 | ee 4 | | | | |
| | | What is a problems Consider resource to the system Process P1 P2 P3 P4 | a systypes m has Allo R1 1 2 4 0 | tor? Extension with term w | replain it lived usi ith five R2, R3> aken. R3 2 2 1 0 | mg mon proces and at Max R1 4 3 9 | ure and itor? sses <i 0="" 2="" 5<="" 7="" and="" td="" time="" time?=""><td>P1, P2, T=0, the R3 3 2 2 3</td><td>dining pl P3, F4, te follow Avail</td><td>hiloso P5> ving s lable R2</td><td>and three snapshot of R3</td><td>ee 4</td><td></td><td></td><td></td><td></td></i> | P1, P2, T=0, the R3 3 2 2 3 | dining pl P3, F4, te follow Avail | hiloso P5> ving s lable R2 | and three snapshot of R3 | ee 4 | | | | |
| 7 | | What is a problems Consider resource the system Process P1 P2 P3 P4 | a systypes m has Allo R1 1 2 4 0 | tor? Executed stem with the cated R2 1 0 2 | replain it lived usi ith five R2, R3> aken. R3 2 1 0 2 | mg mon proces and at Max R1 4 3 9 7 | ure and itor? sses <i 0="" 2="" 2<="" 5="" 7="" and="" td="" time="" time?=""><td>P1, P2, T=0, the R3 3 2 2 3 3</td><td>dining phonon P3, F4, he follow Avail R1</td><td>hiloso P5> ving s lable R2</td><td>R3</td><td>ee 2</td><td></td><td></td><td></td><td></td></i> | P1, P2, T=0, the R3 3 2 2 3 3 | dining phonon P3, F4, he follow Avail R1 | hiloso P5> ving s lable R2 | R3 | ee 2 | | | | |
| | | What is a problems Consider resource the system Process P1 P2 P3 P4 P5 | a systypes m has Allo R1 1 2 4 0 1 . | tor? Executed stem where the second stem whe | kplain it lived usi ith five R2, R3> aken. R3 2 1 0 2 | mg mones proces and at Max R1 4 3 9 7 11 | ure and itor? sses <i 0="" 2="" 3="" 5="" r="" r2="" td="" time?="" timum="" un-sa<=""><td>P1, P2, T=0, the R3 3 2 2 3 3 afe usin</td><td>dining pl P3, F4, te follow Avail R1 3</td><td>hiloso P5> ring s lable R2 1</td><td>R3 0</td><td>ee of</td><td></td><td></td><td></td><td></td></i> | P1, P2, T=0, the R3 3 2 2 3 3 afe usin | dining pl P3, F4, te follow Avail R1 3 | hiloso P5> ring s lable R2 1 | R3 0 | ee of | | | | |
| | | What is a problems Consider resource to the system Process P1 P2 P3 P4 P5 i) Determination of the system ii) Would state? | has be a systypes m has Allo R1 1 2 4 0 1 mine cold the | tor? Executed when the second respectively. Th | replain it lived usi ith five R2, R3> aken. R3 2 1 0 2 t state is ving required. | Max R1 4 3 9 7 11 s safe or | ure and itor? sses <i 0="" 1="" 2="" 3="" 3,="" 5="" 7="" r="" r2="" time="" time?="" timum="" un-sa=""></i> | P1, P2, T=0, the R3 3 2 2 3 3 afe usin > by P1 | dining plants and plants are follow Avail R1 3 | hiloso P5> ring s lable R2 1 | R3 | ee of | | 3 | | |